FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

JUNE, 1949

OHIO STATE UNIVERSITY
JUN 20 1949
LIBRARY

...of Ventilation Includes Removal of ...vers of Shafts, Opening Skylights ...d Roof. Here Are Shown New Yor... ...emen Ventilating a Loft Build... during a Recent Fire.

A CASE - SHEPPERD - MANN PUBLICATION

Are You Ready

for the Summertime

WITH THE MOST EFFECTIVE ARTIFICIAL RESPIRATION KNOWN TO SCIENCE?

Drowning is fatal to many thousands of children and adults every year. But you can be prepared.

In asphyxial accidents speed is of life-and-death importance. The simplicity of operation of your EMERSON RESUSCITATOR is vital for this reason.

Artificial respiration should be started *instantly* by some means—manually, if necessary, until a resuscitator is ready. But medical research shows that a modern resuscitator quickly applied is the *most effective life-saving* procedure.

Please have your representative demonstrate the *"Simplest and Safest"*
Emerson Resuscitator ..... ☐
Please send us additional information ..... ☐
Name ..... **Title** .....
Address .....
. .....

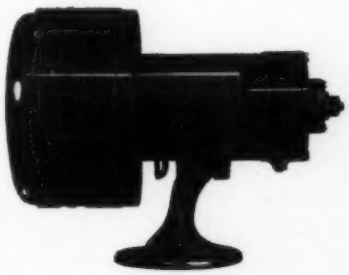
J. H. EMERSON CO.
22 Cottage Park Avenue, Cambridge 40, Mass.

We shall appreciate your mentioning FIRE ENGINEERING *when writing advertisers*

all-around PROTECTION for *all* EQUIPMENT

Every moving vehicle in your department needs the best protective devices available. Lives are precious on every piece of apparatus. All warning lights should be the best available and only Beacon Ray gives over-all all-around protection. Specify Beacon Ray for all new vehicles and give every moving piece of older equipment the protection its crew deserves by replacing obsolete lights with Beacon Ray. Easily installed on all vehicles new or old—this ultimate in warning lights gives reliable trouble free performance. All moving parts are completely enclosed from the weather and the powerful stabbing beam gives full protection from every angle, front, rear and sides—running or standing.

All Federal lights available with Blue Lenses optional.



In response to more and more requests for *concealed* sirens, Federal can now supply a full line of super-power sirens for concealed mounting. These sirens have the extra power necessary to offset the muffling effect of the behind-the-grill and under-the-hood locations. They are actually "skeleton" models of Federal's most powerful sirens. Write us for full details.

Make your next siren a **FEDERAL** *siren*

FEDERAL ENTERPRISES, INC.

FORMERLY: FEDERAL ELECTRIC COMPANY, INC.

8702 SOUTH STATE STREET • CHICAGO 19, ILLINOIS

FIRE ENGINEERING

A Consolidation of FIRE AND WATER ENGINEERING, THE FIRE ENGINEER, FIRE PROTECTION *and* FIRE SERVICE

CONTENTS

Vol. 102 June, 1949 No. 6

	Page
With the Editor — By Fred Shepperd	415
Effective Fire-Police Work Averts Possible Tunnel Tragedy — A Staff Report	416
Installation and Maintenance of Fire Alarm Batteries — By K. A. Vaughan	420
Cambridge Firemen Encounter Handicaps in 3-Alarm Worker	422
Gas from Underground Leak Causes Fatal Hospital Blast — By T. R. Jones	423
Radio Improves Efficiency of Detroit Fire Department — By Paxton Mendelssohn	424
Old "Hoodoo" Fire Alarm Box Had Long and Tragic Record — By Paul C. Ditzel	426
American Fire Control Methods Protect Historic Heidelberg — A Staff Report	427
Short Cuts and Gadgets	431
The Round Table — Safeguarding Church Congregations	432
News of the Manufacturers	433
The Watch Desk — By Roi B. Woolley	435
False Alarms	436
What's Burning	438
World-Wide Fire News — By Roi B. Woolley	440
Questions and Answers	442
Persons in the News	450
Annual Reports Received	458
Convention Dates	462

FRED SHEPPERD
Editor

ROI B. WOOLLEY
Assistant Editor

What—No Formula!

WHAT makes a technical journal interesting and valuable to its readers and advertisers?

● We don't know exactly. After nearly three-quarters of a century of publishing FIRE ENGINEERING we still don't have a pet formula.

● However, we're pretty sure it's simply putting into the publication the sum total of a lot of things, such as timeliness, truthfulness and accuracy, plus a determination to make every page in every issue interesting and helpful.

● Somebody once said that large fires are seldom the result of any one single thing but are rather the net outcome of a lot of *little things* that go wrong.

● Reversing that theory, we might say with proper modesty, that FIRE ENGINEERING is the net result of a lot of little things that are *right*.

The Publishers

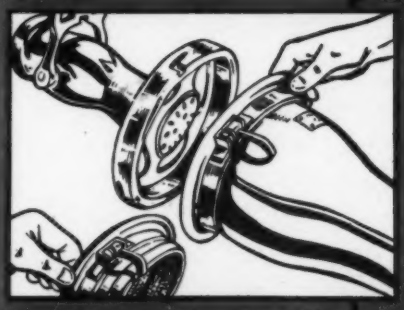
FIRE ENGINEERING

The Journal of the Fire Profession since 1877; published on the fifteenth of each month by Case-Shepperd-Mann Publishing Corp., 24 West 40th St., New York 18, N. Y., also publishers of *Water Works Engineering, Sewage Works Engineering*, etc. ¶Subscription price: U. S., Latin America and Canada, $3.00 a year; Foreign, $4.00; Single copies, 35c. ¶Member of Audit Bureau of Circulations and Associated Business Papers, Inc. ¶Entered as second-class matter April 15, 1929, at the Post Office at New York, N. Y., under Act of March 3, 1879. ¶Contents of this issue copyrighted, 1949, by Case-Shepperd-Mann Publishing Corp. President and Advertising Director, KARL M. MANN; Vice-President and General Manager, I. HERBERT CASE; Secretary and Editorial Director, FRED SHEPPERD; Assistant Advertising Director, WALTER H. FREDRICKS; Eastern Representative, ALFRED J. HOUGHTON; Advertising Manager, WILLIAM J. GIBSON; Circulation Manager, W. H. TOPHAM. CHICAGO OFFICE: W. S. CLEVENGER and L. M. ROCHE, 8 So. Dearborn St., Chicago 3, Ill.; SAN FRANCISCO: CHARLES H. WOOLLEY, 605 Market Street, San Francisco 5, Calif.; LOS ANGELES: AUGUST HAURIN, 6000 Miramonte Blvd., Los Angeles 1, Calif. ¶Printed in U. S. A.

A CASE-SHEPPERD-MANN PUBLICATION
"Specialized Leadership"

FAST NEW METHOD FOR EXTINGUISHING FLOWING GASOLINE FIRES

ROCKWOOD FFF FogFOAM NOZZLES



Drawing illustrates how FogFOAM Screen can be quickly replaced with FOAM Shaper for discharging a solid stream of FOAM.

Rockwood FFF FogFOAM Nozzles are available in 3 sizes for service on 1½", 2½" or 3½" hose.

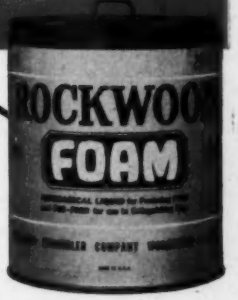
New Rockwood *Automatic* FogFOAM system specially designed for fire trucks enables you to apply FogFOAM thru Rockwood FogFOAM Nozzles to gasoline fires from fire truck as *quickly* as you can discharge water.

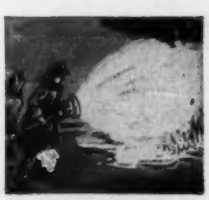
This remarkable FogFOAM equipment will extinguish large spill fires in gasoline with speed not possible with old style chemical or mechanical foam apparatus. It protects the firemen from intense heat and fumes. Rockwood FogFOAM equipment will also pay for itself in a few fires by the more efficient and economical use of FOAM.

Rockwood FogFOAM Nozzles used with Rockwood Automatic FogFOAM Systems give you three types of discharge: (1) FogFOAM with FogFOAM Screen (2) Long range solid FOAM stream thru FOAM Shaper (3) or WaterFOG pattern by shutting off FOAM liquid supply. See pictures at right.

We recommend this new equipment to every municipal fire department for handling the increasing hazard of large flowing gasoline fires resulting from tank truck crashes in your city streets. It also offers you the solution to the airplane crash fire hazard.

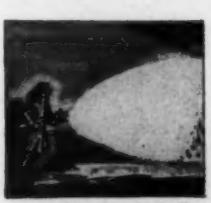
Write for complete literature and prices.





1. FogFOAM

2. FOAM



3. WaterFOG

ROCKWOOD SPRINKLER CO.
54 HARLOW ST. WORCESTER 5, MASS.
Specialists in Fire Prevention Engineering Equipment and Installation since 1907

DUO-SAFETY Safety

THREE SECTION

SERIES 525-A

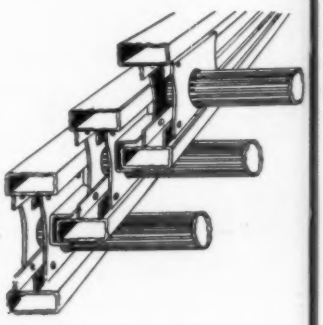
Aluminum Three Sections

The greatest name today in three-section aluminum fire ladders for service trucks is Duo-Safety's Series 525-A. This great ladder, with Duo-Safety's exclusive Tubular Principle, because of its short length in the banked position, eliminates excessive over-hanging of fire ladder equipment. The minimum of banking height is required and the maximum amount of climbing space is provided. And . . . all Duo-Safety aluminum three section ladders . . . both Tubular and Channel Rail design . . . are equipped with one rope hoist . . . both ladder flys will extend simultaneously by pulling one rope. Plus all this . . . the safety, lightness, strength of aluminum, and the many structural advantages found only in Duo-Safety construction make Series 525-A the ladder most fire chiefs demand. Other ladders in this series include: 500-A, Two Section Extension; 550-A, Wall Ladder; 575-A, Roof Ladder and 585-A, Folding Ladder. All are available in a variety of sizes. Write today for free file catalog.

with exclusive

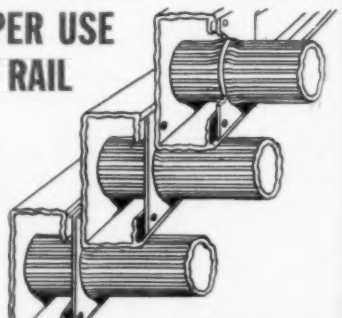
TUBULAR PRINCIPLE

Great strength with light weight, and space-saving design are the important features of Duo-Safety's sensational TUBULAR principle. It's Duo-Safety's answer to REAL Fire Ladder Safety.



SERIES 725A For PUMPER USE CHANNEL RAIL

Here's Duo-Safety's advancement over bulky, old-style, solid side wood pumper ladders . . . the 700 Series with Duo-Safety Channel Rail Construction. Series includes: 700-A, Two-Section Extension; 725-A, Three-Section Extension; 750-A, Wall Ladder; 775-A, Roof Ladder. All are available in a variety of sizes



DUO-SAFETY LADDER CORPORATION
811 Ninth Street . . . Oshkosh . . . Wisconsin

Begin at the end when you buy industrial fire hose

B.F.Goodrich exclusive end protection makes hose last years longer

ORDINARY fire hose is weakest at the ends—where hose and coupling join, where there is extra stress and strain. That's where ordinary tubes sometimes crack and split, causing blowouts. B.F.Goodrich fire hose, when armored with "end protection" is actually *strongest* in this critical area. End protection is an extra ply of hard cotton cords reinforcing the last 12" of each end.

Resists expansion ring damage—B.F.Goodrich end protection provides an extra cushion of cord fabric for the expansion ring to bite into, when the coupling is applied. No danger of tube being cut.

No coupling blowoffs—The extra thickness of cords that end protection adds between coupling and expansion ring makes a tighter union between hose and coupling. No danger of the coupling blowing off.

No connecting strains—When hose is connected to a standpipe or is uncoupled after a fire, a strain is put on it in the coupling area as it is twisted to make a connection. End-protected hose stands these extra stresses.

Stands right-angle bends—When the standpipe points upward, so that the hose connection must make a right-angle bend, end protection keeps the tube from splitting or cracking under the strain.

Other features: End protection can be specified with most types and sizes of industrial fire hose. See this money-saving feature, along with other quality features of B.F.Goodrich fire hose such as, flat cure, Hydroseal treatment to prevent mildew, Koroseal swivel gaskets that couple by hand and prevent locking. Ask your local distributor, or write: *The B.F.Goodrich Company, Industrial and General Products Division, Akron, Ohio.*

Koroseal—Trade Mark Reg. U. S. Pat. Off.

B.F.Goodrich
RUBBER FOR INDUSTRY

We shall appreciate your mentioning FIRE ENGINEERING *when writing advertisers*

The Original MIDWESTERN Yellow Striped Safety Coat Is Again Available . .

for Men of Action!

Here's Protection and Comfort in Your Hazardous Work of Safeguarding Life and Property Against FIRE!

Modern fire fighting calls for ***specialized*** protective clothing . . . clothing that safeguards the fireman's life on every run . . . clothing that enables him to use his equipment to the fullest advantage.

Every Midwestern product combines the thoughts and suggestions of practical Fire Chiefs and firemen from every section of the country . . . and every purchaser profits from years of Midwestern research and experience. That is why the famous Mackinaw Coat and other Midwestern clothing have embodied in their design every feature necessary for the protection and comfort of firemen.

In our vast selection of crude rubber materials you will find a type of fabric suitable for your climate and needs. The softness and flexibility in the high-grade materials used are your assurance of long time service and comfort. Many Fire Chiefs are now including Midwestern clothing in their regular yearly budget and, by placing your order early, you can be assured of this adequate protection when needed.

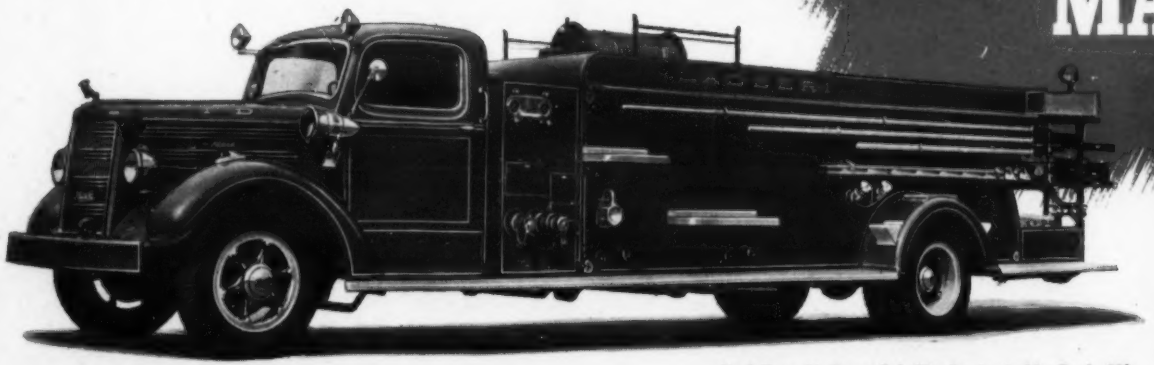
For complete information, have your Midwestern dealer show you our new garments now manufactured from crude rubber compounds. A letter to the factory will also bring you material samples for your inspection.

We now have available: White, Ivory and Brown crude rubber coats for Chiefs, Assistants and other officers; also all sizes short and ¾ length felt lined Firemen's boots for immediate shipment.

MIDWESTERN MFG. CO., Mackinaw, Illinois

Manufacturers of the Famous **MACKINAW Coats**

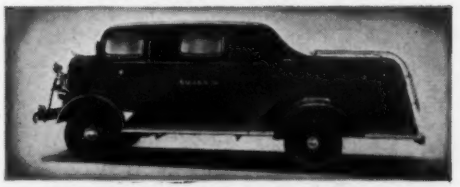
High Protection *at* **LOW COST** * *with the versatile* **MACK** *45's*



Mack Type 45, Coupe Cab City Service Ladder Truck, 200-gpm booster pump, recently delivered to Orono, Maine.

Type 45, Open Seat Style Hose Car, 200-gpm booster pump, 1500-gpm turret nozzle, now serving Bay Shore, L. I.

Type 45, 500-gpm Semi Cab Pumper-Tanker, 400-gal. booster tank, recently put in service at Tallman, N. Y.



Type 45, Cab-over-engine Squad Car, Sedan Cab Design, one of 12 supplied to Chicago, Illinois.

*Every community seeking modern fire protection with minimum investment should investigate the popular Mack 45's. Available in 500-gallon pumpers, hose and squad cars, and city service ladder trucks — in standard open seat, semi or coupe cab models — the compact 45's offer the same pace-setting performance, bulldog stamina and ease of operation that have made the name Mack mean the finest in fire apparatus.

In every detail, 45's reflect the superiority of Mack design and construction. Built expressly for fire-fighting service, their reliable, six-cylinder engines provide plenty of power for fast runs and long, full-capacity pumping jobs. The husky Mack chassis forms a rugged, shock-resistant unit that stands up under the toughest service. Cabs and bodies are designed and made in Mack's own shops to give the full protection to personnel demanded by today's traffic conditions.

If you're planning for apparatus in the lighter-weight range, be sure to have your Mack representative show you the 45's many advantages. No matter what your needs may be, you'll get full-fledged fire-fighters, through and through, when you *Modernize with Macks.*

Mack
Fire Apparatus

MACK MANUFACTURING CORPORATION
Fire Apparatus Division
Long Island City 1, New York

Factory branches and dealers for parts and service in all principal cities. In Canada: Mack Trucks of Canada, Ltd.

7516

TRIPLE COMBINATION PUMPERS — 500 TO 2000 GALLONS . . . SQUAD AND HOSE CARS . . . CITY SERVICE AND QUADRUPLE COMBINATION LADDER TRUCKS

It will help if you will mention FIRE ENGINEERING *when writing advertisers*

RESPIRATORY SAFETY by M-S-A

Approved by the U. S. Bureau of Mines

M-S-A Demand Mask

A cylinder-type breathing apparatus employing either oxygen or compressed air for ½-hour respiratory protection

This simple, easy to use Demand Mask supplies oxygen (or air) for the fireman in dangerous atmospheres according to his breathing demands, making him independent of outside air. Utilizing the M.S.A. Demand Regulator, the Mask's operation is automatic—a turn of a valve to start is all that is required. Non-fogging facepiece, comfortable light-metal carrying frame and padded leather harness are special, appreciated features. *Write for Bulletin B-16.*

M-S-A All-Service® Gas Mask

Protects against poisonous gases, vapors and smokes, wherever oxygen in air is sufficient for safety

The famous M.S.A. All-Service Gas Mask is known and used throughout America. Light, easy to put on and wear, this all-around Mask protects against every commonly-encountered breathing hazard (including carbon monoxide) except oxygen deficiency. The "All-Vision" Facepiece again made of flexible natural rubber affords wide-angle seeing with comfortable seal on the face—long-lasting canisters are quickly replaceable. *Send for Bulletin EA-8.*

FOR EVERY FIREFIGHTING HAZARD

Time-proved in service on the job!

THE UNIQUE

M-S-A Chemox® SELF-GENERATING

Makes its own oxygen . . . as you breathe!

OXYGEN BREATHING APPARATUS

CHEMOX is the only breathing apparatus with a replaceable canister that generates oxygen as the wearer breathes. Just 13½ lbs. complete, CHEMOX delivers a plentiful supply of oxygen for a minimum of 45 minutes under hard firefighting exertion—affording dependable protection in unventilated areas where smoke, gases, and oxygen deficiency make air unbreathable. *Do you have our Chemox Bulletin B-14?*

CHEMOX is ready always for instant use. Canister is replaceable quickly, renewing service period at scene of action without delay.

Fog-free lenses—no moving parts—no high pressure valves or fittings—easy to maintain—simple to use.

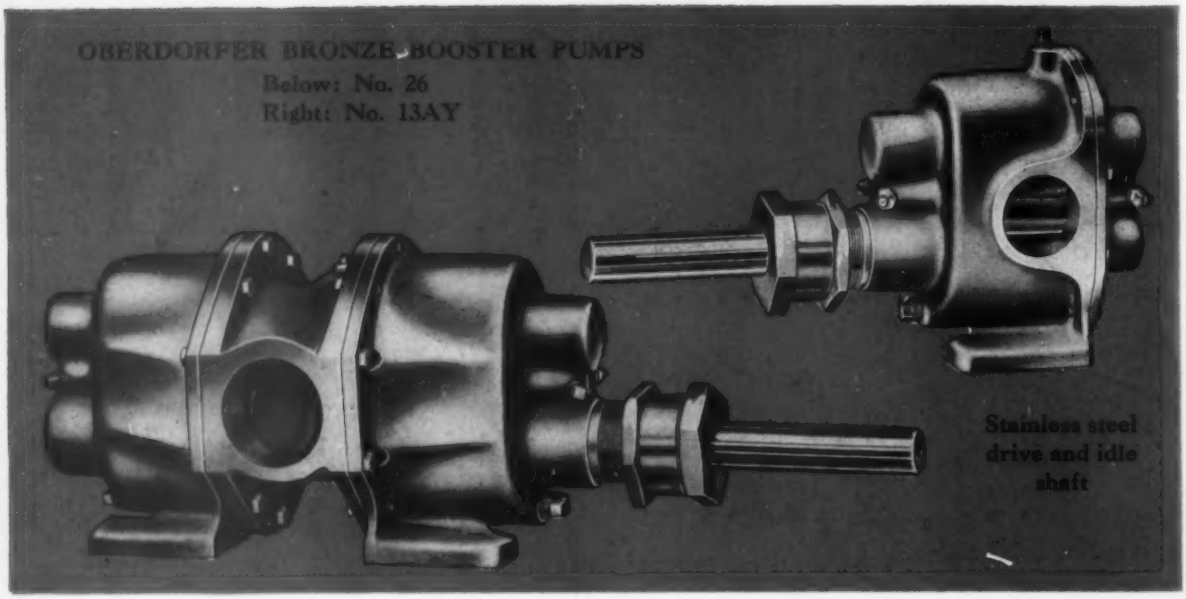
MSA SAFETY EQUIPMENT HEADQUARTERS

MINE SAFETY APPLIANCES COMPANY

BRADDOCK, THOMAS AND MEADE STREETS · PITTSBURGH 8, PA.

At Your Service:

54 BRANCH OFFICES IN THE UNITED STATES AND CANADA



Greater pump efficiency and longer life proved by actual experience

Year after year, hundreds of municipalities steadily purchase Oberdorfer Fire Pumps for their fire fighting equipment. They do this because long experience has amply proved the strength of Oberdorfer claims to finer performance, longer life, and lower pump costs. Here are actual performance records of the Oberdorfer Fire Pumps shown above:

Pump No.	Pump Shaft RPM	Pounds Pressure	Hose Length and Size	Dry Suction Lift in Feet	Volume in Gal. Per Minute
13	1600	120	500′—1½″	15′	75
13	2000	100	500′—1½″	15′	100
26	1600	120	500′—1½″	15′	150

The #13 Oberdorfer Pump lists at $69.00; the #26 at $172.50. Both are *corrosion-resistant all-bronze construction* with stainless steel shaft, assuring longer useful life than iron pumps costing far more. Slightly higher in price west of the Rocky Mountains.

If you want the maximum in efficiency, performance and long life for your department's pump dollar, it will pay you to specify Oberdorfer Bronze Fire Pumps. Write for catalog and name of distributor in your vicinity.

OBERDORFER FOUNDRIES, INC., SYRACUSE, NEW YORK

We have openings for experienced fire equipment sales representation in many desirable territories in the United States and Canada. We request that your complete selling experience be given by mail if interested.

TORONTO, ONTARIO—The largest industrial city in Canada has an outstanding record for fire prevention and protection. The efficient Fire Department, under the capable direction of Chief Peter Herd, selects the finest of equipment for their use. Twelve new Cab-Ahead-of-Engine LaFrance-Foamite* pumpers and aerials are being added to the Department's equipment which will make Toronto the best protected city in the Dominion.

*American-LaFrance in U.S.A.

Specify LaFrance-Foamite Equipment for YOUR community. Specifications furnished free on request.*

AMERICAN-LaFRANCE-FOAMITE CORPORATION
ELMIRA, NEW YORK, U. S. A.
LaFRANCE FIRE ENGINE AND FOAMITE LIMITED
TORONTO 9, ONTARIO, CANADA

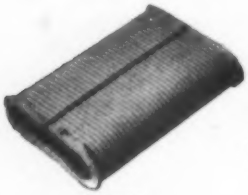
WHEN YOU'RE RACING AGAINST DESTRUCTION

DEPEND ON FLEXIBLE BWH FIRE HOSE

BWH Fire Hose is built to carry enormous water volume. Its tough construction resists abrasion from dragging over rough surfaces. Yet it isn't bulky. And it's so flexible, it's off the truck and into action in record time.

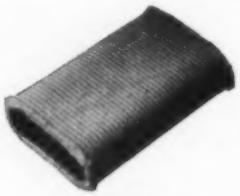
The weight-saving, circular-woven cotton jacket originated by BWH engineers is one reason BWH Hose handles so easily. And the know-how gained in BWH's 71-year leadership in the rubber field accounts for its exceptional strength and lasting quality.

To learn more of the advantages of buying BWH Fire Hose, call the nearest representative of the General Detroit Corporation. This famous organization is exclusive sales agent for BWH Fire Hose in most communities. Look for the "General" trademark in the classified section of your phone book next time your city is in the market for the best in fire fighting equipment!



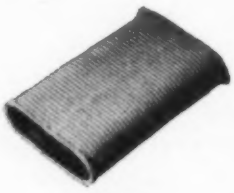
BWH
"BOSTON FIRE JACKET" HOSE

Double Jacket
Heavier, stronger fibers, perfect adhesion, smooth, friction-resistant waterway. Rates tops in every test!



BWH
"PARAMOUNT" HOSE

Double Jacket
Designed for easy handling and long service on tough jobs. Ages well, withstands high pressures.



BWH
"MILO" HOSE

Single Jacket
For long, trouble-free performance in communities where a light service hose is adequate.

BWH
"UNDERWRITERS" HOSE

Single or Double Jacket
Made in strict accordance with the National Board of Fire Underwriters' specifications. Labeled or unlabeled.

Distributors of famous

BOSTON WOVEN HOSE AND RUBBER CO.

Municipal Fire Hose

THE GENERAL DETROIT CORP.

DETROIT 7, MICHIGAN

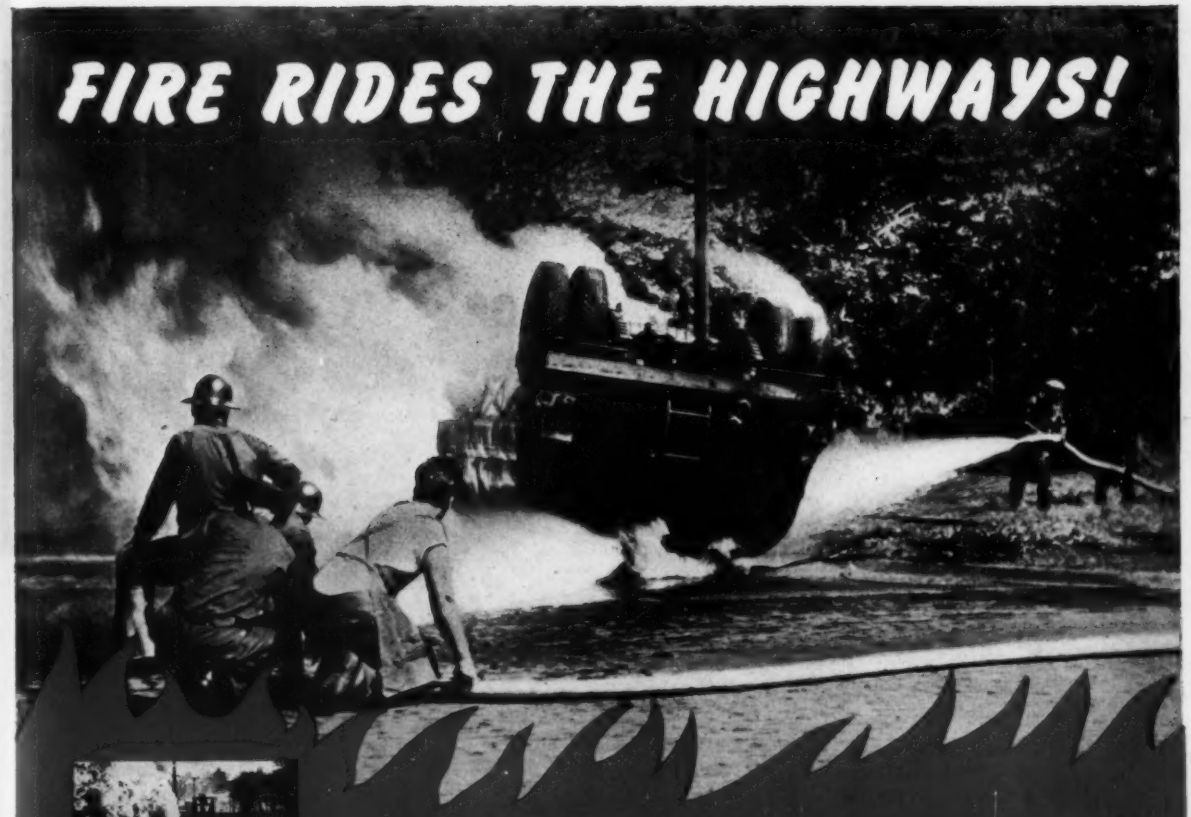
NEW YORK • ATLANTA • CHICAGO • DALLAS

Subsidiary:

THE GENERAL PACIFIC CORP.

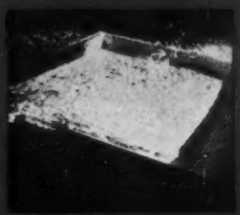
LOS ANGELES • SAN FRANCISCO • SEATTLE

FIRE RIDES THE HIGHWAYS!



BLAZING GASOLINE TANK

AER-O-FOAM APPLIED



OUT IN 60 SECONDS!

FIRE TESTED

AER-O-FOAM

KILLS FLAMMABLE LIQUID FIRES

The menace of flammable liquid fires and destruction rides the highways, threatening traffic, property and lives in every community.

National Aer-O-Foam is the answer to blazing gasoline and oil. In a matter of seconds, Aer-O-Foam snuffs out the hottest gasoline fires with its thick, tough, adhesive foam. It spreads rapidly, covering everything with an impenetrable blanket that's air-tight . . . fire tight! Every batch of National Aer-O-Foam has been fire-tested and performance-proved in fighting flammable liquid fires. And Aer-O-Foam is non-corrosive; is easily washed away when wet or brushed away when dry.

For positive fire protection for plants, fleets, warehouses, equipment—use National Aer-O-Foam. Remember—to stop the fire . . . start the foam. Can your community afford to be without this protection?

NATIONAL FOAM SYSTEM, INC.

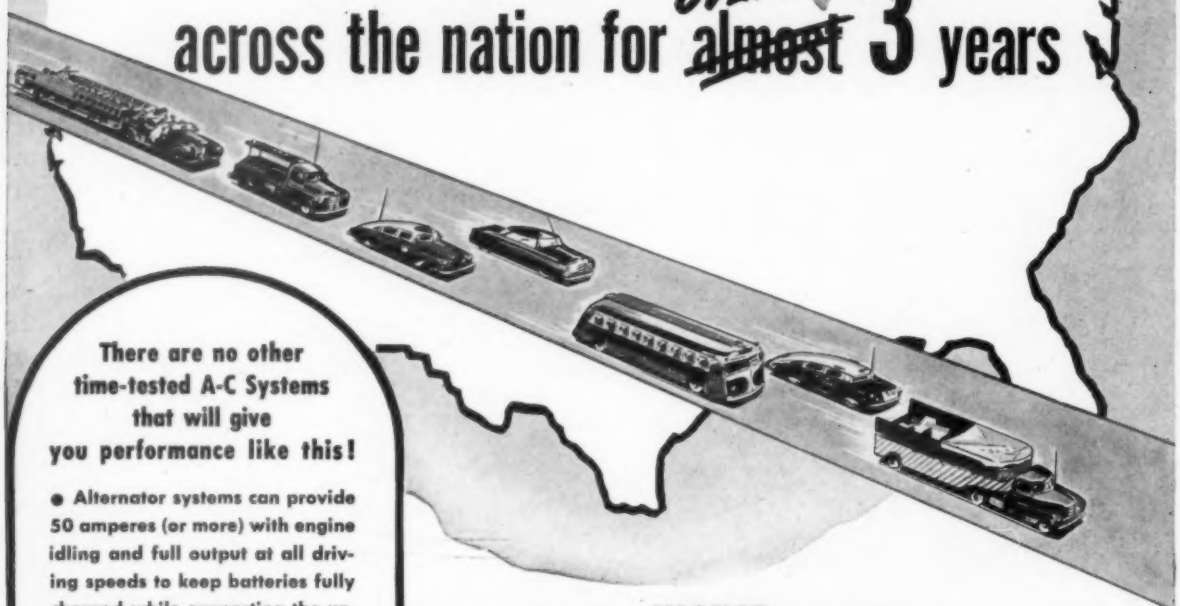
Headquarters for Foam Fire Protection

Packard Building, Philadelphia 2, Pa.

PROVED

HERE'S MORE POWER TO YOU!

across the nation for ~~almost~~ OVER 3 years



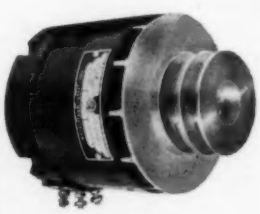
There are no other time-tested A-C Systems that will give you performance like this!

- Alternator systems can provide 50 amperes (or more) with engine idling and full output at all driving speeds to keep batteries fully charged while supporting the unlimited use of accessories.
- Weigh 60% less than D-C equipment of comparable rating.
- Require less space and less support.
- Require less maintenance and operate with less danger of burnout because Alternator has no commutator with commutating brushes or no rotating armature windings to cause sparking.
- Eliminate radio "fade out" and range reduction caused by weak batteries—hold radio noise level to an absolute minimum and prolong life of radio equipment.

THE ORIGINAL HIGHER-OUTPUT A-C GENERATING SYSTEMS KEEP BATTERIES UP —COSTS DOWN . . . SUPPORT MORE ACCESSORIES!

Way back in March, 1946, Leece-Neville introduced its now-famous, HIGHER-output A-C Generating Systems without fanfare. Today, over three years later, installations on fire department and other vehicles operating under all types of conditions in all parts of the country have conclusively proved three things: 1. These systems keep batteries up; 2. These systems keep costs down; 3. These systems support the use of more accessories. If such *proved* advantages interest you . . . see your nearest Leece-Neville Service Station or write *The Leece-Neville Company, Cleveland 14, Ohio.*

THIS ALTERNATOR is the heart of the popular Leece-Neville A-C Generating System rated at 14 volts—100 amperes. Other 14-volt systems rated at 60, 80 and 150 amperes. For 6-volt circuits, there is a 45-ampere system (convertible to 60) and an 80-ampere system.



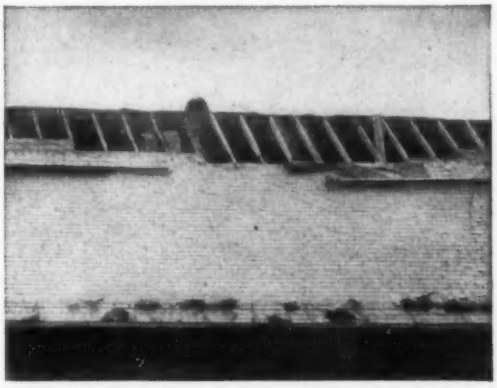
LEECE-NEVILLE

Pioneer and STILL Quality Leader

CRANKING MOTORS • GENERATORS • VOLTAGE REGULATORS • SWITCHES

Please mention FIRE ENGINEERING *when writing advertisers*

Note—deep charring of inside of elevator roof. High-pressure fog equipment killed flames quickly, with little damage to elevator or grain.



Small—damage from fire limited to elevator roof. Adjuster said conventional hose lines would have caused much greater water damage.

New—roof was the major repair on 60-foot elevator. Use of John Bean Fog Fire Fighter averted ruin of thousands of dollars worth of grain.

John BEAN

HIGH-PRESSURE FOG FIRE FIGHTER

Successfully Combats Elevator Fire

Success of Middleport, New York, fire department in holding down grain elevator fire damage to $500 credited by chief to enterprising use of John Bean High-Pressure Fog apparatus by his men.

IN ELEVATOR fires, water damage at blazes and delay in getting to work on the fire are often big factors in heavy losses.

Not so when your department is equipped with John Bean High-Pressure Fog Fire Fighters! In this case history, the elevator fire was subdued by firemen who quickly climbed through smoke and heat with a Bean High-Pressure Fog Nozzle and rapidly brought the flames under control, with *minimum water damage to the grain.* Maximum protection with minimum fire loss is assured with John Bean Fog Fighters. Write for additional details.

Successful—in grain fire fight as on all types of fires. John Bean High-Pressure Fog Fire Fighter, carrying its own water supply, provides two guns of 30 gallons each and 850 lbs. pump pressure.

BEAN *Original* **HIGH-PRESSURE FOG FIRE FIGHTER**

CAN BE MOUNTED ON MOST STANDARD TRUCK CHASSIS

FOOD MACHINERY AND CHEMICAL CORPORATION

JOHN BEAN DIVISION, DEPT. 126, LANSING 4, MICH. • JOHN BEAN DIVISION (WESTERN), 409 JULIAN ST., SAN JOSE, CALIF.

BUILDERS OF BEAN HIGH-PRESSURE PUMPS FOR OVER 60 YEARS

GUARDING THE LIVES OF MILLIONS FROM COAST TO COAST

DID YOU KNOW YOU CAN BUY

A WARNING SIGNAL LIGHT THAT WILL LAST AS LONG AS YOUR FIRE APPARATUS?

MORE THAN 12,000 MARS SIGNAL LIGHTS

Have Been Installed on the Fire Apparatus of Over 300 Cities and Towns

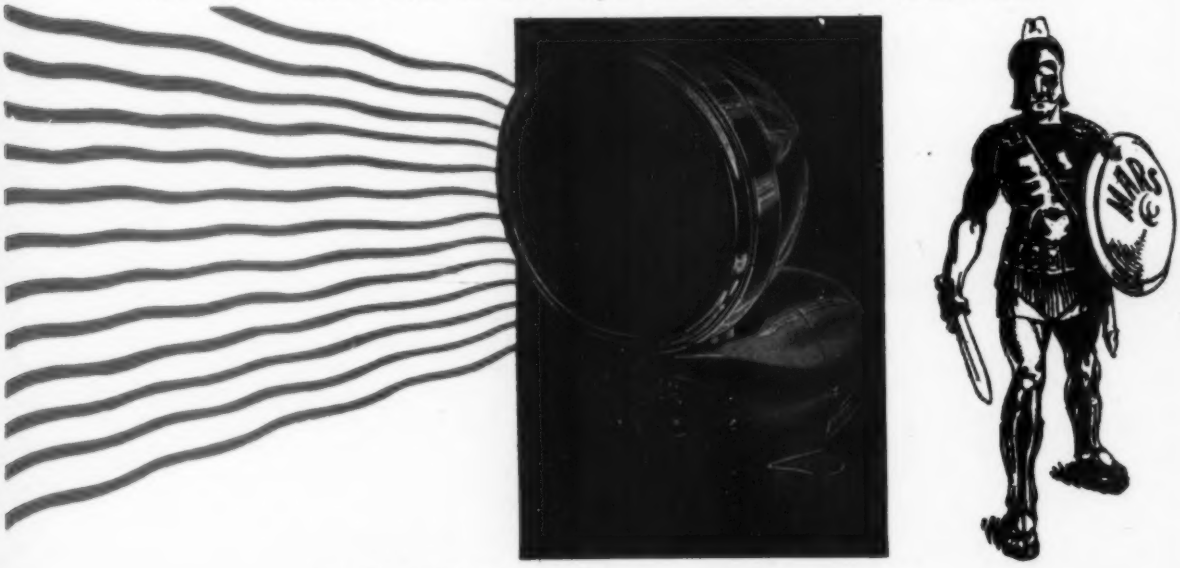
So Far As We Know

All of These Lights Are Still Giving Satisfactory Service!

OF THE FEW MARS LIGHTS THAT HAVE BEEN RETURNED FOR REPAIRS PRACTICALLY ALL WERE DAMAGED IN SOME ACCIDENT.

Mars Light Is Fully Guaranteed for Five Years

Mars Has Never Failed to Back Up This Guarantee and Never Will



THERE ISN'T ANOTHER LIGHT LIKE

THE MARS SIGNAL LIGHT

Its powerful figure 8 beam of red light—flashes a mile ahead of your apparatus, from building line to building line and hundreds of feet into the air. Traffic approaching intersections ahead of you see the powerful figure 8 red beam long before you reach the crossing. Motorists everywhere recognize this light. More than 12,000 are already in use on fire apparatus from coast to coast.

WHEREVER SAFETY OF FIREMEN, APPARATUS AND THE PUBLIC IS THE FOREMOST CONSIDERATION YOU'LL FIND FIRE DEPARTMENTS USING AMERICA'S FOREMOST WARNING SIGNAL LIGHT

IMMEDIATE DELIVERY

MARS SIGNAL LIGHT CO.

5737 W. DIVISION ST.
CHICAGO, ILL.

HAVE YOU SEEN THE NEW

MARS TYPE 'G" SIREN?

Ask Us About It

Insist on MARS when you order New Equipment — Install it on Present Equipment.

REPUBLIC experience looms large . . .

For years Republic has been one of the largest suppliers of fire hose. From experience, it knows the damages to the jackets and tubes caused by traffic, summer's heat, and zero weather. Republic hose will take these and other equally severe abuses. That is why you will never go wrong by insisting on Republic brands.

REPUBLIC FIRE HOSE

The jackets of Republic Fire Hose, made only of selected yarns, are plain, Provar Processed (mildew and vermin resistant), and waxed, or in any combination. Tubes have long ageing qualities. Five municipal grades, 3 industrial grades (also made with rubber or neoprene covers), and light weight hose for forestry service are available.

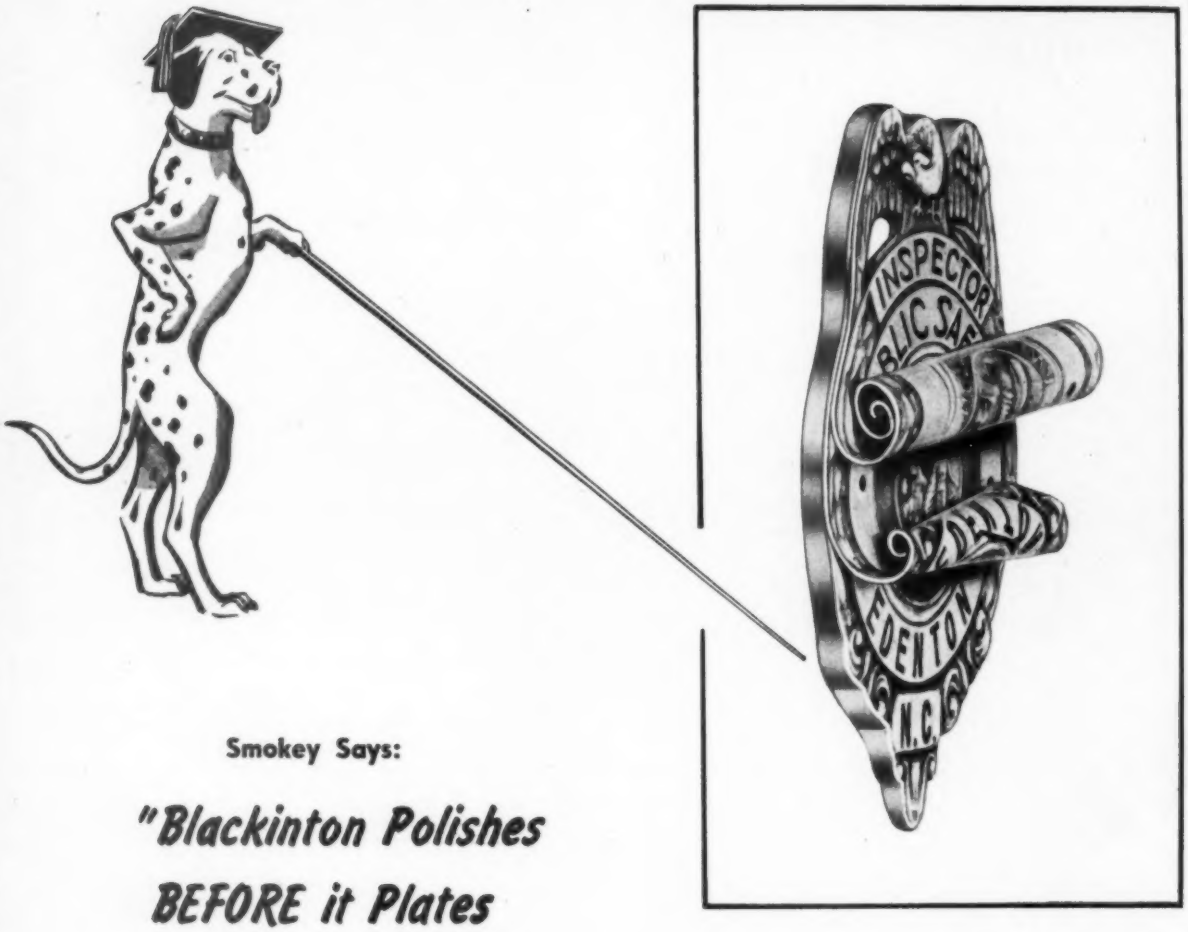
MECHANICAL RUBBER GOODS BY

REPUBLIC RUBBER DIVISION

REPUBLIC RUBBER DIVISION

LEE RUBBER & TIRE CORPORATION · YOUNGSTOWN, OHIO

Lee Deluxe Tires & Tubes · · · Coatesville, Pa.



Smokey Says:

"Blackinton Polishes BEFORE it Plates as well as AFTER."

Yes Sir, all Blackinton badges are polished to perfection before any of the plating operations are begun. This under-polish is something that you can't see, but it's something that helps to make Blackinton plate the longest wearing obtainable. It's just one of the many quality features that make it profitable to specify Blackinton when ordering badges. Leading equipment dealers carry Blackinton insignia.

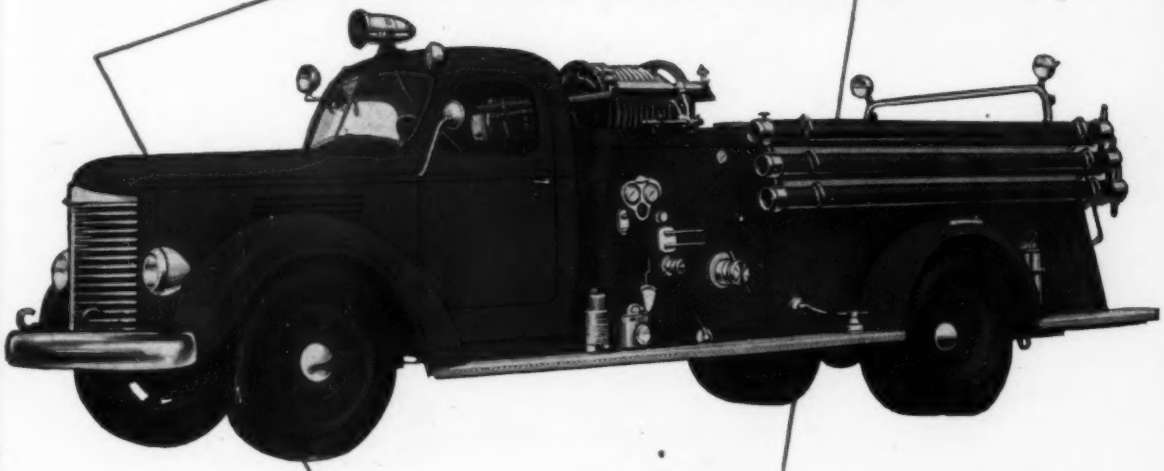
V. H. *Blackinton* & CO., INC.

THE OLDEST NAME IN INSIGNIA

ESTABLISHED 1852

ATTLEBORO FALLS, MASSACHUSETTS

another first in... ADVANCED ENGINEERING



BARTON SUPER-FOG

standard equipment on all AMERICAN FIRE APPARATUS TRUCKS

Being first in the development of advanced engineered fire fighting equipment has always been our aim. We are now proud to present our latest development – Barton Super-fog. An entirely new development in fire fighting fog, resulting in superior fog streams and long range straight streams at *moderate pressures* from conventional fire engine pumps of rated capacities acceptable to the National Board of Fire Underwriters.

Barton Super-fog equipment is standard on all American Fire Apparatus trucks.

OTHER AMERICAN FIRE APPARATUS *FIRSTS* THAT ARE STANDARD EQUIPMENT

FLAT BOOSTER TANK WITH REAR FILLER
Results in perfect load distribution and convenient filling.

IMPROVED TANK OUTLET VALVE
Releases water complete to bottom of tank without air. Frost proof, quick acting and adjustable.

FROST PROOF DRAIN SYSTEM
Pump and all connections are drained quickly through special 6 port valve by use of one lever.

IMPROVED HOSE REEL
Electrically controlled for winding, leak proof, minimum friction loss.

Barton-American Fire Pumps Used Exclusively.

Write for additional information about Barton Super-fog and American Fire Apparatus trucks, or let our established sales representative call and assist you with your fire fighting problems.

AMERICAN FIRE APPARATUS

BATTLE CREEK, MICHIGAN

CUT DOWN DROWNING DEATHS

with E & J RESUSCITATION EQUIPMENT

This summer, be ready for even the most desperate drowning cases with modern, efficient resuscitation equipment. Before the swimming season gets into full swing, have your present equipment inspected by the E & J representative in your area. He is an expert on resuscitation equipment and techniques, and will be glad to talk to you about your rescue work.

Should you need additional or more modern equipment, your E & J man will demonstrate the latest E & J Resuscitator, with no obligation to you.

If limited funds are preventing you from getting a needed E & J Resuscitator, ask about the popular E & J money-raising program—it has been successful from coast to coast.

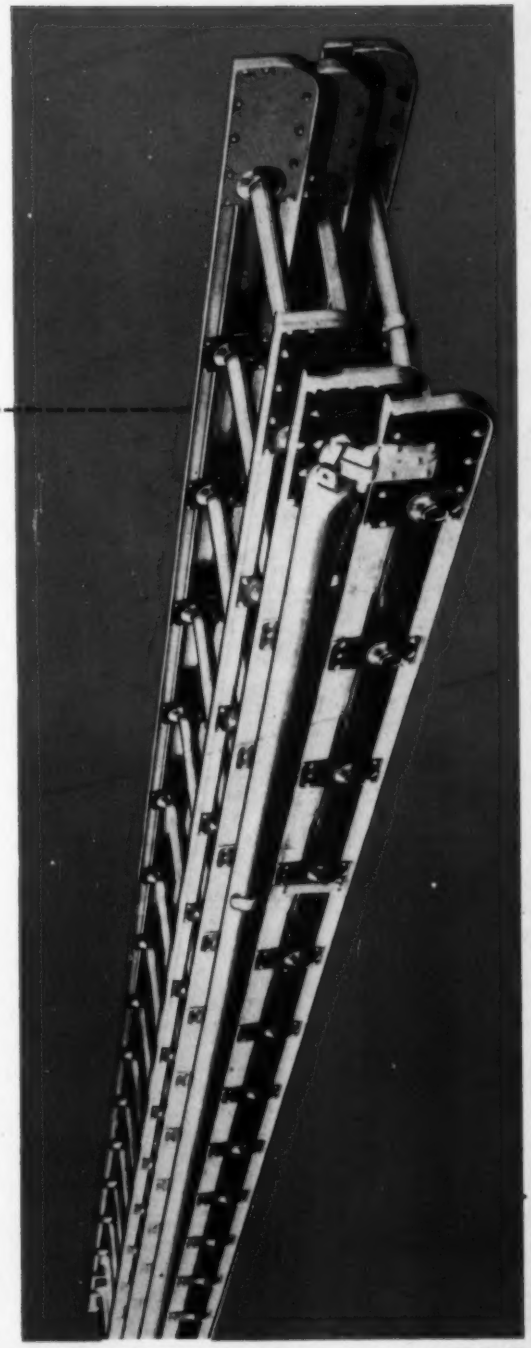
Right now, while you're thinking of it, write a letter or card to E & J and say, "Send your man around"—or if you have a specific question, we'll be glad to answer it by mail. Also, yours for the asking is the fact-filled folder, *Saving Human Lives*. Start the ball rolling for a safer summer in your area by writing to E & J *today*. The full address is shown below.

E & J MANUFACTURING CO.

6116 SAN FERNANDO ROAD, GLENDALE 1, CALIF.

one ladder

that stands up to *every* test



One fire ladder—the *original* aluminum fire ladder—stands out today as the leader in fire-fighting safety and efficiency. The experience, the *test* of 18 years has proved beyond all doubt that *original* aluminum ladders perform better and stand up better than any other type of ladder.

Built of strong, light ST61 aluminum alloy these ladders are designed for fast, easy placement in confined spaces, using fewer men than cumbersome wooden ladders. Original aluminum ladders are *rugged*—require no care—and are splinter-proof, spark-proof, rust-proof and practically *wear*-proof.

Adding to the endurance and safety inherent in aluminum construction are the dozens of details of engineering and fabrication which distinguish *original* aluminum ladders from any other fire ladder. Stiff extruded T-channel design of long members, permanently anchored corrugated rungs and riveted double-plate bracing are a few of these exclusive test-proved features.

For *tested* safety, *tested* efficiency, *tested* durability, specify original aluminum ladders as original or replacement equipment.

ORIGINAL MANUFACTURERS OF ALUMINUM FIRE LADDERS

ALUMINUM LADDER COMPANY

200 CARBIS ST., WORTHINGTON, PA.

IN CANADA: C. E. HICKEY & SONS, LTD., HAMILTON, ONTARIO

SINGLE WALL LADDERS • LIGHT-DUTY EXTENSION LADDERS • HEAVY-DUTY 2, 3 AND 4-SECTION EXTENSION LADDERS • ROOF LADDERS • FOLDING LADDERS • PIKE POLES

CATALOG ON REQUEST

MAXIM
MOTOR FIRE APPARATUS

300-750-1000-1250 GAL. PUMPERS
CITY SERVICE TRUCKS—QUADRUPLES
AERIAL LADDER TRUCKS—AIRPORT
RESCUE TRUCKS

This AERIAL for EVERETT, MASS.

will take its place in a typical New England city, as hundreds of other perfectly engineered —skillfully built—MAXIM apparatus have done before. Now, this same dependable apparatus is available to you in almost every part of the country. We will welcome the opportunity to show you how you can benefit by buying quality built MAXIM apparatus.

MAXIM MOTOR COMPANY *Middleboro, Mass.*

Please mention FIRE ENGINEERING *when writing advertisers*

BRAND NAMES PLEDGE THE MAKERS RESPONSIBILITY

WELL DESIGNED

HONESTLY MADE FROM BEST MATERIALS

VERY RELIABLE

80 YEARS SERVICE TESTED

ASK THE CHIEF

NICE HANDLING

NEVER STIFFENS

EASY TO PACK

EASY TO CLEAN

FIRST CHOICE IN THE PRESSURE LINES

ASK THE FIREMEN

• KEYSTONE •

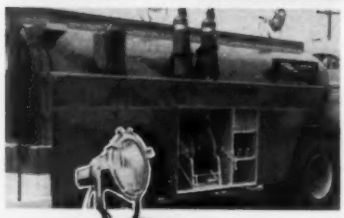
FULL CABLED FULL TWILL WOVEN GENUINE WAX AND PARA GUM TREATED HEAVY DUTY FIRE HOSE

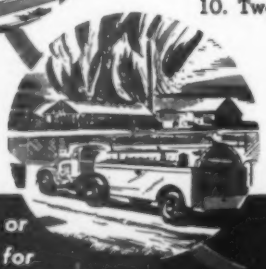
FABRIC FIRE HOSE CO.

1869 SANDY HOOK, CONN. 1949

ONLY *Smithco*

gives you a 2000 GALLON FIREFIGHTER





the NEW *Smithco* **FIREFIGHTER**

. . . designed especially for suburban and rural communities with limited water supply

The new Smithco Firefighter delivers the goods. No rural or suburban community can afford to be without it. Only Smithco gives you a 2000 gallon carrier plus all these extra features.

1. Hale Type FZZ Pump—60 to 150 G. P. M. @ 90 to 30# Pressure
2. 1500 Watt 110 Volt A. C. Light Plant
3. Three 250 Watt Floodlights, Cable, Adapters, etc.
4. Two 12′ Aluminum Pike Poles
5. One 10′ Aluminum Folding Ladder
6. Two 10′ Sections of 2″ Suction Hose with Quick Detachable Couplings
7. Three hundred feet of 1½″ Underwriters "DJ" Hose
8. Two hundred and fifty feet of ¾″ Booster Hose
9. One ¾″ Mystery Fog Nozzle
10. Two 1½″ Mystery Fog Nozzles
11. One 1½″ Siamese Connection
12. One 24′ Aluminum Extension Ladder
13. Four Rubber Rainsuits and Hats
14. Two 15-pound CO_2 Extinguishers
15. One Pioneer Rack with Axe, Pick and Shovel
16. Two 5-Gallon Fuel Cans

RECOMMENDED TRACTOR—F7 or F8 Ford, WC-20T White or Equal

Phone, wire or write today for further information!

L. B. SMITH, Inc.

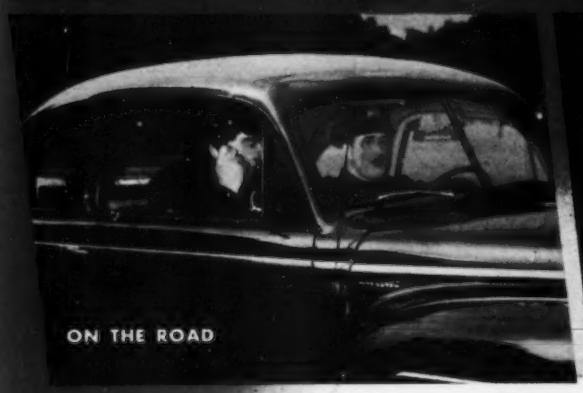
CAMP HILL, PA., SYRACUSE, N. Y., PHILADELPHIA, PA.

Greater Selectivity

means less interference . . .

AT HEADQUARTERS

THE NEW RCA STATION RECEIVER
Type CR-9A (152-174 Mc)


ON THE ROAD

THE NEW RCA CARFONE
Mobile 2-way FM radio, 152-174 Mc

. . . you get the greatest selectivity with RCA's All-New Communication Equipment

• You're going to hear a lot about selectivity from now on. In communication systems, receiver selectivity, more than any other single factor, determines the degree of freedom from interference. This is important both for today and for the future.

Recognizing this fact, RCA has taken the necessary steps to make its all-new communication equipment the most selective of any on the market today. To the user, this means reliable operation substantially free from interference. In addition, this greater selectivity now makes adjacent-channel operation a practical possibility—thereby greatly increasing the number of potentially useful channels for mobile radio communication systems.

For complete details on the new RCA Station Receiver type CR-9A, and the new RCA CARFONE for mobile use, write today. RCA engineers are at your service for consultation on problems of coverage, usage, or complex systems installations. Write Dept. 104-F.

Free literature on RCA's All-New Communication Equipment—yours for the asking.

COMMUNICATION SECTION

RADIO CORPORATION of AMERICA

ENGINEERING PRODUCTS DEPARTMENT, CAMDEN, N.J.

In Canada: RCA VICTOR Company Limited, Montreal

Announcing **A Truly Compact, Lightweight, Efficient**

DRY CHEMICAL EXTINGUISHER

20 Lb. Size

Here is a powerful, remarkably efficient dry chemical extinguisher that is easy to use and looks good in any surroundings. Its extraordinary efficiency is the unique product of GENERAL engineering. All extinguishing agents are contained inside the beautiful, seamless drawn outer case, yet by simply unscrewing the cap, you can recharge the extinguisher yourself in a matter of minutes. Its extra light weight makes it easy to carry and handle—an important factor when fire must be fought quickly. Underwriters' approved and especially recommended for gasoline, oil, chemical, and electrical fires, it is equally useful indoors and out—ideal for motor vehicles.

A GENERAL QUICKAID PRODUCT

THE GENERAL DETROIT CORP.
DETROIT 32, MICHIGAN
NEW YORK • ATLANTA • CHICAGO • DALLAS
Subsidiaries:
THE GENERAL PACIFIC CORP.
LOS ANGELES • SAN FRANCISCO • SEATTLE
THE GENERAL DETROIT CORP., CANADA, LTD.
WINDSOR • TORONTO • MONTREAL • WINNIPEG

Extra Fire Fighting Capacity At Your Command . . .

WARD LA FRANCE

One of the new Ward LaFrance Pumpers delivered to the Boston Fire Department

Every fire department needs reserve capacity to meet unusual or unexpected situations.

For large and small departments, Ward LaFrance pumpers are engineered with *extra* capacity to surpass special local requirements. You can get the benefit of Ward LaFrance experienced engineering for your own fire service. Ward LaFrance Pumpers and Triple Combinations are the units needed for replacement of old apparatus and to protect new-growth areas in your community.

A new Ward LaFrance at your command . . . with exact road test rating known in advance . . . will build up your fire-fighting strength.

Call on the Ward LaFrance Distributor in your area, or write direct. Helpful illustrated bulletins are available.

WARD LA FRANCE TRUCK CORPORATION

ELMIRA, N. Y.

We shall appreciate your mentioning FIRE ENGINEERING *when writing advertisers*

WHY CITIES PREFER GAMEWELL

. . . EXPERIENCE . . .

John N. Gamewell, in 1855, purchased the original development of what has come to be known as the GAMEWELL fire alarm system. The founder of the industry and his successors, THE GAMEWELL COMPANY, have since specialized in the development, manufacture and installation of fire alarm, police, and other emergency signaling systems for municipalities, industrial, institutional and governmental properties.

The experience acquired during 94 years is of inestimable value to users of GAMEWELL fire alarm systems. It has resulted in the production of signaling systems of remarkable reliability and unparalleled durability upon the unfailing performance of which cities rely.

In evidence thereof GAMEWELL fire alarm systems installed in Manila during 1903, and in Singapore during 1910, were largely destroyed during the recent war — *for the replacement of the war-damaged systems both cities turned to* GAMEWELL.

The Original GAMEWELL Fire Alarm Box

Modern Fire Alarm Box — the GAMEWELL Three-Fold Type of 1949

THE GAMEWELL COMPANY

NEWTON UPPER FALLS 64, MASSACHUSETTS

IN CANADA: NORTHERN ELECTRIC COMPANY, LTD., MONTREAL

FIRE ENGINEERING

JUNE, 1949 VOL. 102. NO. 6

With the Editor

A Lesson— and a Warning

The explosion and fire in New York's Holland Tunnel, described in this issue, and which caused injuries to 70 persons, many of them firemen, endangered countless others, piled up traffic, and knocked out of service a large section of the nation's communications system, provides a warning even more vital than one against the violations of tunnel traffic regulations for transporting explosive chemicals in bulk through such an artery.

If one accidental fire and blast such as this can render inoperative a large section of our vital communications system, one can get a pretty good picture of what a secretly placed bomb could do to America's defense system in time of war.

The episode should be taken not merely as an example of our laxity in regulating the transportation of explosives and flammables of all kinds through our municipalities and critical areas, but as a grave warning against the centralization of wires and cables so necessary to peacetime operation and so essential to security in the case of war.

There undoubtedly will be a brand-new set of rules and regulations governing the type of traffic to be permitted in the Holland and other Tunnels as a result of the near disaster. Heavier penalties for violating tunnel regulations have already been demanded by Port Authority officials. But such action will not remove the greatest danger to our communications systems.

Much talk has been heard about the decentralization of our industries as a defense measure. Not much thought however has been given to decentralization of communications channels, which must be undertaken if the nation is ever to be prepared for a national emergency.

To carry these vital cables, especially the costly coaxial cables for television, through the Holland Tunnel may appear at first glance the most efficient and least expensive method. But if one truck blow-up can, in the words of news dispatches, create the "worst telephone failure in the country's history," then it would seem some drastic changes are needed in our methods.

Damage to the tunnel is estimated at close to $1,000,000, but no accurate estimate can be advanced of the economic loss and the trouble and annoyance imposed on the public because of the rupture of critical communications.

When one pictures the thousands upon thousands of motor vehicles hauling cargoes of God-knows-what within these carriers, despite I.C.C. and other rules and regulations over the streets and highways, and then contemplates the pitifully inadequate measures being taken to check up on these carriers and punish infringers of existing laws, the necessity of our overhauling our entire regulatory machinery appears evident. And when one relates these hauling hazards to our exposed vital communications, the need of broad scale action is imperative. The fire service is naturally intimately concerned with this problem. It can do no harm for its officials to give the matter serious thought.

Fred Sheppard

Effective Fire-Police Work Averts Possible Tunnel Tragedy

New York-New Jersey Forces Overcome Unusual Obstacles in Controlling Subaqueous Fire Involving Chemicals

A STAFF REPORT

Editor's Note: **This account of the disaster at the Holland Tunnel is prepared from currently available information, including statements of eye witnesses and workers at the scene. It lacks the authenticity of the official reports of the New York City and Jersey City Fire Departments, especially of individual company operations, which are not available at this writing.**

The editors express their appreciation of the cooperation of the many who contributed to this account and regret that editorial limitations prevent inclusion of all their names in this text.

NEW YORK CITY is a place where almost anything can happen — and usually does, sooner or later. The metropolitan area is no stranger to death and destruction from fires and explosions, and panic in various forms. But in its long history it has never been called upon to face quite the same crisis as confronted it, and its neighbor, Jersey City, on Friday, May 13, last, when the Holland Tunnel, world's present largest underwater vehicular tube, was visited by fire and explosions that threatened wholesale death, actually did injure nearly seventy persons; ruptured vital interstate communications, and caused property damage of over half a million dollars.

It was the worst disaster to befall the $47 million tunnel since its opening on November 13, 1927, and is the first time that both New York and New Jersey fire forces operated jointly on any tunnel emergency. Only once previously, this was in 1946, was one of the tubes blocked; when a truckload of chewing gum burned in the south tube, which had to be closed for four hours. Although there have been over 2,000 fires of sorts, mostly in vehicles in the tunnel, these have with the exceptions mentioned all been promptly handled by the tunnel's own fire-police emergency staff, well trained for such emergencies.

Truck Overloaded with Chemicals Source of Trouble

Shortly before 9:00 A.M. on the morning of Friday, May 13, the driver of a sixteen-ton trailer truck, loaded in contravention of regulations with 4,400 gallons of highly flammable and volatile carbon disulphide, heard a noise and discovered fire in the rear of his cargo.

His testimony indicates that he did not know the hazardous nature of his cargo, but on seeing the fire, he knew enough to leap from the truck cab without delay and sprint for the New York portal of the tube.

The fire in this vehicle, followed quickly by blasts as many of the eighty 50-gallon drums of the chemical, set off a chain reaction of fires and explosions that ripped off large sections of the underwater vehicular artery's steel and concrete roof and reduced a dozen or more big trucks to a mangled and heat-fused mass of wreckage. Twenty-three trucks in all were counted damaged or destroyed.

Lights in the tunnel went out and the tube filled with yellowish-black smoke, shot through with wierd flashes of varicolored flames from the burning vehicles and their assorted cargoes.

Drivers of trucks and passenger cars, leaped from their vehicles and struggled through suffocating smoke; others were blown out of the seats of their machines. In the trucks involved by the spreading fire, were paint and thinner, meat, produce, bundles of rags and a quantity of chlorine. The resulting fumes, together with the deficiency of oxygen, made it practically impossible for anyone without proper protection to live in the immediate explosion area.

According to one authority, the tube in the immediate vicinity of the fire must have registered 4,000 deg. F, which literally melted the enclosed communications cables in the tube, practically stripped the mesh lining of the tunnel ceiling and spalled the tile and other masonry work for 300 feet. Fortunately, however, the steel casing of the tube was not damaged and the ventilation system continued to function despite the destruction. Many attribute the lack of fatalities to the operation of the tunnel's ventilation system which, following the alarm, was speeded up.

Fire Department Operations

The first word of the trouble came to the police desk of the New York Port Authority at Vestry and Varick Streets, Holland Tunnel Plaza. At 8:48 A.M. the telautograph on Patrolman John Burns' desk recorded the message that there was "trouble" at "Amber Station 16". This is about half a mile from the Jersey end of the tunnel.

The alert meant that a patrolman at that station had pushed an amber button to signify that something was wrong. The practice then would have been for him to report to his superiors upstairs in the control room. Instead, the patrolman went back to take a look. What he saw caused him to turn in a fire alarm. This was at 8:56 A.M.

This alarm brought out the Authority's

New York Rescue 3 Going Into Action at the Holland Tube Fire

Firemen, equipped with various types of approved breathing equipment work their way past drums that contained carbon disulphide while others operate hose lines on smoking wreckage. Breathing and lighting equipment was at a premium in the underground struggle.

Photo by Ed Heavey

Evidence of the Terrific Heat in the Holland Tunnel Fire

Firemen spray twisted frame of destroyed truck in Holland Tube. Emptied drums that contained carbon disulphide at right. Note spalling of tunnel walls, exposed cables and conduit and hanging pieces of ceiling, some of which injured rescue workers. Old OCD helmets were worn by some tunnel workers and volunteers.

garage equipment from the New York end, an emergency tractor and a jeep, as well as the tunnel's fire fighting apparatus. Patrolman Burns called the New York Police for an ambulance when two truck drivers were brought in from the tunnel by a passenger car. They were badly shaken.

The turning in of the first fire alarm automatically shut down the eastbound tube, the one directly affected. At 9:20 A.M. the west bound tube, from New York to New Jersey, was closed to traffic, by which time firemen and other emergency services were on the scene.

Within seconds of the alarm, radio cars had entered the tube and calls for ambulances were being received and transmitted. At the same time, municipal fire forces were converging on both tunnel portals together with police emergency and utility equipment.

Meanwhile the tunnel Police were bearing the brunt of the struggle. Joseph Lushkin, a Port Authority Patrolman, whose station was near the scene of the explosion, and who was overcome by fumes, said he saw "a cloud of gray smoke coming at me; "it smelled like ammonia." He telephoned the supervisor to start pumping more air.

A Special Patrolman and fire officer, John McMahon, who was stationed near the exploding truck, stuck fast to his tiny cubicle on the catwalk when the drums began to explode, shouting to truck drivers to link hands and make their way in the darkness to the Jersey side. As the first emergency truck entered from that side, McMahon left his post and assisted in removing stalled vehicles. He was overcome by fumes and removed to a hospital.

According to Fire Chief Frank Ertle, in charge of Jersey City fire fighters, at least 150 private automobiles which had been abandoned, had to be hauled out of the tunnel by firemen and policemen, aided by drivers. Much this same situation existed on the New York side where strenuous efforts were made to remove vehicles in the path of the fire. In this operation firemen were aided somewhat by the wind, which apparently carried the fumes toward the Jersey side.

Fire department officials praised the Port Authority police-fire force for their quick use of hand extinguishers on burning trucks. In this work men operated without masks and, as a result a number were knocked out.

New York Fire Department Operations

The New York Fire Department received its first information on the trouble via Police Department telephone at 9:13 A.M., and Rescue 1 was ordered to Box 308 at Varick and Broome Streets. This brought Chief John Heaney of the 5th Battalion who encountered pandemonium when he got inside the tube entrance.

He was unable to call the fire department because the Tunnel telephone system does not connect with the public telephone system, but instead deadends in the tunnel control room.

Chief Heaney told the tunnel operator to notify fire headquarters, via the public phone system, to transmit a full first alarm assignment for Box 308. He then ordered his car back to the Plaza to mobilize the incoming companies. Box 308 was clocked at 9:31 A.M. followed a minute later by special call 10-710-2 for Rescue 2 (Brooklyn) to Box 710, Lincoln Tunnel, 38th Street, where it was directed to proceed to New Jersey and down to the Jersey City portal of the Holland Tunnel. Box 308 brought E. 30, 13, 27, 24 and L8.

At 10:12 A.M., Signal 10-308-3 was transmitted, which brought Rescue 3, (Bronx) to the Manhattan end of the tunnel (at this time, also, three public and two Police Emergency units were called). At 10:18 A.M. Fire Department Ambulance 1 with Dr. Harry Archer was ordered to proceed to the New Jersey portal, via the Lincoln Tunnel and about this time Ambulance 2 (Brooklyn) and Ambulance 3 (Medical Hq. jeep) from Spring Street were called to Box 308.

At 10:28 Rescue 4 (Queens) was ordered to Box 308 and at 10:34, after the smoke and gases had taken heavy toll among the first alarm assignment, five men each from the Third, Fourth, Fifth and Eleventh Divisions were special called to Box 308. At 10:25 A.M. twenty more men and one ambulance were summoned and all available doctors, to Box 308. At 10:40 Rescue 5 (Staten Island) with one officer and six men was ordered to locate in Ladder 24 in West 31st Street.

At 11:30 A.M. an oxygen unit from the quarters of Rescue 1 was special called. At 11:10 a second alarm was sounded (Signal 2-2-308) when chiefs in charge

Picture of a Little Corner of Purgatory in the Holland Tunnel

Smoking wreckage of the Manhattan-bound 16-ton truck loaded with 4,400 gallons of carbon disulphide taken soon after fire fighters had knocked down the fire. Note slabs of the tube's ceiling on catwalk at right. Twenty trucks in all were wrecked or badly damaged.

wanted four pumpers with three-inch hose so that a relay operation might be set up to be ready in the event the tunnel's water system became inoperative. This brought E 55, 31, 7, 18; L 5. The following changed locations: E 26/30, 203/31, 209/7, 34/18; L 1/8, 1/25. The relay was never required, but it was ready nevertheless.

The gasoline supply wagon was special called at 11:30 (Signal 9-308-12) and two minutes later Signal 9-308-94 started the department's coffee van toward Box 308, from its 43rd Street location (E. 65). At 11:56, twenty more men, ten from the Bronx and ten from Brooklyn, were summoned.

At 12:30 P.M. as a precautionary measure, the Fireboat "Harvey" was ordered (Signal 2-2-2-86) to the Jersey side of the river to watch for air bubbles in the water, it being thought that the tunnel structure might be leaking.

After this, no additional force was called until about 6:35 P.M. Friday evening, when Chief Ben Wells of the 5th Battalion overhauling with Engine 30 and Ladder 8, special called the department's smoke ejector (Signal 9-308-41) to further clear the atmosphere in the tube.

Firemen used plenty of both 2½-inch and 1½-inch lines, connected with the tunnel's water supply system, which fortunately continued to function, to cool down the trucks and cars and tunnel interior, as well as to dilute the heavily toxic atmosphere. Even with the latest approved breathing equipment, the stifling, atmosphere of the tube necessitated men working in relays, which was another reason for calling the additional personnel.*

Many Firemen Among the 66 Injured

Reports from police, fire and Port Authority officials on both sides of the river indicated that at least sixty-six persons suffered injuries as a result of the tunnel fire. Most of these were treated at the scene and released. Twenty-seven were listed in New York Hospitals and the Jersey City Medical Center. Despite this total, however, there were no fatalities.

Nine New York Fire Department doctors at the scene were kept busy with inhalators and other emergency equipment. They included Chief Medical Officer Nilsen, and Doctors Blum, King, Kramer, Rosenfeld, Saland, Schien, Scheinfeld and Stenbuck. With them was Dr. Harry Archer, Second Deputy Fire Commissioner. A fire department surgeon also was at hand. Police, hospital, public and other volunteers assisted in aiding the seemingly endless procession of casualties. Dr. Walter Ballinger, a Bellevue Hospital interne was himself slightly injured when struck on the head by falling debris.

The scene at the Jersey end of the tube duplicated that on the New York side. Rescue and ambulance units were the center of activity with casualties on all sides and men and nurses working frantically over the victims. Many doctors and nurses entered the tube and were right at hand when firemen and tunnel police dropped.

Port of Authority policemen were hard hit. Seven listed as sergeants, policemen and firemen were reported injured. One, Deputy Chief Thomas Maloney, was treated and sent home from the Jersey side. Several truck drivers also were casualties.

*This account naturally applies to the forces on the New York side of the tunnel. The experiences of Jersey City fire fighters were similar in most respects.

New York Tries Out Its New Walkie-Talkie at Tunnel Disaster

Fireman Frank Naughton, equipped with one of the ten new walkie-talkies recently installed by the New York Fire Department, stationed at the Manhattan portal of the Holland Tunnel, communicates with a teammate inside.

Oxygen a Key Factor in Battle

For the first time in its history, the New York Fire Department used four rescue squad trucks at one time, in a single operation, while its fifth unit stood fast to cover the entire metropolitan area.

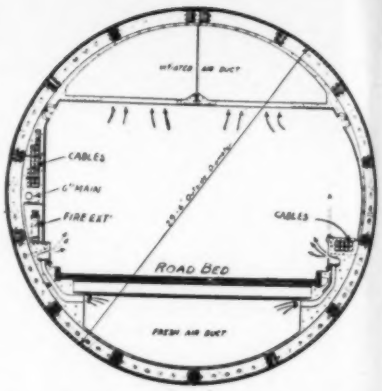
Officials pointed out that the department has fought many fires that involved toxic and even lethal fumes and gases, but never one that required more caution than the tunnel blaze. That there were not more serious consequences is due in no small measure to the fact that the New York Fire Department was able to mobilize the necessary respiratory protective equipment.

Soon after the arrival of Rescue 1 of the N. Y. F. D., first to respond on a special call, fire headquarters was advised of the seriousness of the emergency. William J. Hennessy, Assistant Chief of Staff and Operations, on duty at the time, notified headquarters that all the department's oxygen helmets would be needed for firemen operating in the tunnel. Chief of Staff and Operations Frank Murphy called the rescue companies from Brooklyn, Bronx and Queens to respond immediately with extra supplies of oxygen and respiratory breathing equipment.

Worst Communications Tieup

The explosions and fire resulted in what was characterized by the American Telephone and Telegraph Company as the worst communications failure in its history.

Twenty minutes after the initial explosion, the intense heat in the tunnel had fused five A. T. & T. cables, each the diameter of a baseball bat, which were encased in conduits behind the tunnel's tiled walls for a quarter of a mile.



Cross Section of One of the Twin Holland Tunnels

Half of all long distance telephone circuits out of New York City to points south and west were cut off. Lines used by three radio networks, and the State Department's Voice of America were knocked out. Two coaxial tubes, leased to television companies for network telecasts were destroyed as were lines used by press agencies, banks, brokers, large corporations and the Western Union.

According to the A. T. & T., 2,600 circuits for long distance phone calls were cut off, including main trunks to the Pacific Coast, Washington and points South and West.

Fast and efficient work by company line workers resulted in 1,400 of the circuits being restored within twenty-four hours by re-routing. Ten minutes after the failure was discovered, the Western Union switched 200 important circuits to the West onto the company's high capacity micro-wave radio beam system.

Radio programs were cut off or delayed for some time. No television programs were affected because none was on the air at that time. The telephoto wire used by news agencies was cut out for some time.

Even before the wreckage was all removed, telephone repairmen in plastic helmets and rubber boots began the intricate job of splicing, together 2,976 long-line and 922 local toll circuits in the five telephone cables severed in the explosion. Re-routing on 1,550 other long line circuits and some 700 New York-New Jersey toll circuits enabled the several telephone and telegraph companies to keep up virtually normal service within a few hours of the blast. Only a few linemen could work in the tunnel at a time while crews of other agencies were removing debris and making other repairs.

The Truck Driver's Statement

According to the story of the driver, Edmund Tyndall, 39, in whose truck the trouble started, told to Jersey City police, he had no knowledge of the hazardous cargo in his closed 31-foot truck trailer nor had he been given a bill of lading by his employer, the Boyce Motor Lines of Jersey City. Starting out at 8:00 A.M., he said, he was instructed to drive to Pier 2, Thirty-Third Street, Brooklyn, where he was to deliver his cargo to the Farrell Steamship Line for export.

Tyndall entered the Jersey side of the tunnel shortly before 9:00 A.M. and had gone about three-quarters of a mile when he heard a "loud boom." He said he looked in the rear view mirror and that all he could see in the back of his truck was flames. Tyndall said he leaped out of the cab while the truck was still in motion and saw it swerve into the left, or fast lane used by automobiles.

He then ran up the tunnel toward the New York end until he caught up with a truck that was moving away from the scene of the fire and rode with the driver to the New York exit.

Inspector Peter Smith in charge of the Detective Bureau, Jersey City police, expressed himself as satisfied that there was no violation of any municipal ordinance or state law on the part of the driver.

Meanwhile, it was established that Tyndall had no bill of lading, nor was he stopped at the Jersey end of the tunnel for it, or any other information about his cargo.

Port Authority officials said that every truck driver is supposed to have a bill of lading and that drivers could be questioned by policemen about the contents of their vehicles. The interrogation of every driver is not done because traffic would be hopelessly snarled.

Nevertheless, officials said, every trucking firm using the tunnel is given a set of regulations on what cannot or can be transported through the tubes and in what quantities. Authorities said that the amount of carbon disulphide carried by the truck was forty-four times the amount permitted by regulations.

The tunnel regulations establish the maximum quantity of chemicals such as carbon disulphide through the tube at 100 gallons, with a limit of 1,000 pounds on the gross weight. The actual load carried by the chemical truck was reported as "4,400 gallons" or "48,536 pounds."

Characteristics of Carbon Disulphide

Carbon Disulphide, the chemical which is said to have been the cause of the trouble, is classed as a highly volatile liquid with an offensive odor, giving off at comparatively low temperatures vapors which form with air to create flammable and explosive mixtures. It has a flash point of —30 deg.C (—22 deg.F) a flammable range of 1 per cent to 50 per cent (upward propagation). The ignition temperature is dangerously low, being about 100 deg. to 106 deg. C. It is endothermic, and vapor may be ignited by a heavy blow. The vapors are heavier than air (vapor density 2.62), and may travel back a considerable distance to a source of ignition, and flash back. It is more hazardous than gasoline.

The chemical is toxic; 3200 to 3500 parts of vapor per million (0.32 to 0.385% by volume), may cause dangerous illness in one-half to one hour. The products of combustion contain sulphur dioxide, which in concentration of 0.2 per cent by volume in air may cause serious injury in one-half hour or less. Often poisonous carbon monoxide is present in the products of combustion.

The recommended procedure for handling is to isolate and safeguard containers against mechanical injury and metallic blows; keep in unheated compartment away from sunlight and any other source of ignition, including electric lighting fixtures and other electrical equipment.

Carbon disulphide is heavier than water (Sp. gr. 1.29) and sparingly soluble in it. Sand, carbon dioxide or other inert gas is recommended as extinguishing agents. Cooling and blanketing action of water may be used in case of fires in metal containers or tanks. Foam is not recommended—nor is carbon tetrachloride.

Description of the Tunnels

The Holland Tunnels, with their twin tubes under the Hudson River connecting New York and New Jersey, are at present the longest and largest subaqueous vehicular tunnels in this country.

The total length of each tunnel is 9,250 ft.; between portals, 8,330 ft.; between shafts 3,375 ft.; under the river 5,480 ft. The roadways are 20 ft. wide with 13 ft. 6 in. headroom. The outside diameter of each tube is 29 ft. 6 in.; the capacity is estimated at 3,800 vehicles per hour, 46,000 daily and 15,000,000 annually. Maximum grade is 4.5%. The depth below mean high water is 72 ft. to the top of the tunnel; the depth to the bottom of the roadway from mean high water is 93 ft.

The tunnels extend east and west, the northerly tunnel being New Jersey bound and the southerly tube for New York bound traffic. Each tube is wide enough for two vehicles abreast. Traffic in each tube is in one direction. Vehicles cannot cross from one tube to the other but employees and attendants can cross at three different points through companionways. The tunnels are lined throughout with white tile; they are brightly illuminated. There is a sidewalk and guard rail on one side only of each tube for tunnel policemen on patrol. The tunnels cost about $48,000,000 to build.

At the time of their opening, regulations permitted any kind of motor vehicle, except dynamite transportation wagons, to use the tunnels. Horse drawn vehicles are barred because they are too slow. All vehicles pay a toll. As the complexity and hazards of the traffic increased over the years, regulations were stiffened to prohibit or limit the use of the tunnels by vehicles carrying certain types of dangerous cargoes.

The Ventilating Equipment

The ventilating equipment consists of 84 fans, varying from 25 to 200 H.P. each; not more than 56 of the fans are expected to be in service at any one time and these will be sufficient to insure a circulation of air of approximately 4,000,000 cu. ft. per minute. This means the air in the tunnels will be changed every 90 seconds.

Each tube is divided into seven sections, or ducts, for the purpose of ventilation, with two intake and two exhaust fans allotted to each section. The incoming air is fed to the tunnels through horizontal openings along each side of the tube. This latitudinal slot is located at about the level of the hub of the wheel of a motor vehicle.

The air is not fed to the driveways under such pressure as to create a draft; it is uniformly and evenly supplied and the carbon monoxide which is created by the motor exhausts is limited to four parts in 10,000. The exhaust chambers are located in the ceiling of each tube and draw the air off to the ventilating buildings where the exhausts are discharged through tall stacks.

The Tunnel Water System

The tunnel water system consists of two 6-in. cast iron mains (one in each tube) located on the side of the roadway above the curb. Connections to these 6 in. pipes are made through three sources in New York and two in Jersey City.

The water in the tunnel system is maintained under pressure by means of four automatically operated 300 GPM centrifugal pumps. These pumps are located in pump rooms in the two land shafts on each side of the river. Electrical energy is supplied to these pumps from three different sources in New

(*Continued on page* 445)

Workers Clearing Up Wreckage After Holland Tunnel Fire and Blast

Tunnel workers, telephone and telegraph linemen labor under emergency lighting to clear away 650 tons of rubble and wreckage following fire-blast that injured 66. Note destruction of tube's top and side walls. Tube itself was uninjured. Cat walk at left with empty fire extinguisher shells.

Installation and Maintenance of Fire Alarm Batteries

By K. A. VAUGHAN*

AUTOMATIC fire alarm systems have been developed to a point where the average person of today takes them for granted. Yet a hundred years or so ago our elaborate alarm systems would be one of the major scientific achievements of the age.

Of all the little known, little talked of, and little publicized components of the fire alarm system, the storage battery is probably the most overlooked. And yet without it, alarm systems would often fail, and millions of dollars of damage would result.

The storage battery acts as a stand-by unit to supply the alarm circuit in case the main power supply fails—as it often does in case of fire. The battery is called upon only once in a great while—and yet its ability to go into action at any time, even after years of standing by, is of utmost importance if the alarm system is to be a truly effective transmitter of danger signals.

Although the installation and maintenance of the storage battery is simple, there are a few procedures to follow to be sure the alarm system always operates and to achieve maximum battery life. But before going into them, let's spend a few words on the function of the battery in fire alarm systems.

All approved fire alarm circuits use the closed-circuit principles: breaking the circuit causes the alarm to be signalled. Usual current drain of these alarm systems is 100 milliamperes. Voltages required to maintain this current depend, of course, on the resistance in the connecting circuit; similarly, the required voltage will determine the number of cells in the battery installation. Voltages ranging from 24 to 96 are commonly encountered in the field.

Alarm circuits operate on direct current. To supply it in the small quantities required, a step-down transformer reduces the voltage from an AC power line; the lowered AC voltage is then rectified to DC, and from the rectifier, direct current at the proper voltage powers the alarm system.

With this means of supply, it's obvious that failure of the AC power supply, transformer or rectifier would render the alarm system inoperative, and it is against such an emergency that the storage battery is included in the system. Enough current is constantly supplied to the battery to keep it fully charged. This requirement can range up to 150 milliamperes. Such installations keep the battery ready to supply emergency current instantly, and tend to keep battery care at a minimum.

In addition to the voltage required by circuit characteristics, the size and type of battery selected for the job will also be influenced by the number of hours reserve capacity desired.

So much for the preliminaries on the function of the battery and the alarm system. Now for the actual installation and maintenance recommendations.

From the above discussion it will be seen that once the battery is installed, it, with rare exception, would never be removed from service during its life.

The battery and rectifier installation can be located in any dust-free location, provided some ventilation is available and not too much heat. It should not be exposed to direct rays of the sun, nor should it be near steam pipes, radiators, or other heat-generating equipment. A warm battery tends to self-discharge at an accelerated rate which not only increases the load on the power source to keep it fully charged, but tends also to shorten battery life. When installed without a rack, enough space should be allowed above the battery to permit water to be added and hydrometer readings to be made easily. The battery rack should be so located that all cells are easily accessible for maintenance purposes.

When uncrating a battery the usual precautions necessary when unpacking glassware should be taken (batteries used in alarm systems have either glass or rubber jars). Remove the top and sides of the boxes in which the cells are shipped and slide the cells or trays out of packing boxes.

Do not lift cells by terminals. Lift cells by supporting them from beneath.

Before unpacking the battery, the battery rack should be put in place.

The rack should be leveled so that it sets firmly. It is usually bolted to the floor and all necessary insulation provided in the individual battery supports.

In installing a battery:

(1) Have all cells located on the rack before making any connections.

(2) Clean all contact surfaces and coat with a thin film of vaseline or other non-corrosive grease. The cell terminals and intercell connectors can be cleaned by using a wire brush. Lead-plated copper connector contact surfaces may be cleaned using No. 00 sand paper or a suede brush. Care should be taken not to remove the lead plating.

(3) Locate the cells in a straight line in the center of the rack. Start in the center of the row and put connectors in place (positive to negative) lining cells up with a cord. Check all connections to determine that polarity is correct and that no cells are installed in reverse. A voltmeter may be used as a final check. The overall battery voltage should equal two times the number of cells in series.

(4) After installing fully-charged batteries, make sure that all connections are tight; that each cell is properly connected; that the electrolyte is at the high level mark.

(5) The positive terminal of the bat-

Fig. 1. Typical Fire Alarm Battery Installation. Note Accessibility of Units

*Manager, Field Engineering, Gould Storage Battery Corporation, Depew, N. Y.

tery must be connected to the positive side of the system and a negative terminal of the battery to the negative side of the system. A suitable scale voltmeter should be used to check the polarity of the system and battery.

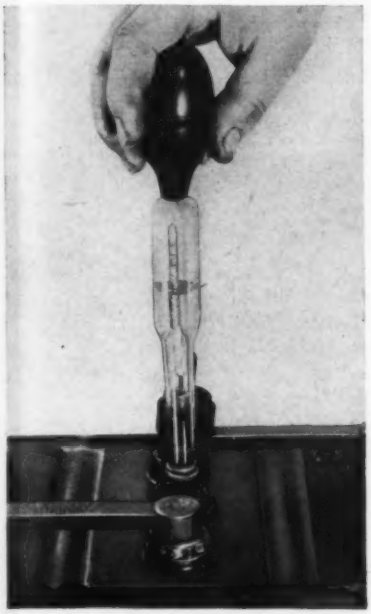


Fig. 2. Taking the Specific Gravity of a Glass Jar Fire Alarm Unit. Readings Should Be Taken at Least Once Every Three Months, Preferably Once Every Month

(6) The float current supplied to the battery from the power source should be adjusted to result in an average of 2.15 volts/cells for pasted plate types and 2.17 volts/cell for Planté type batteries. The regulation should be checked frequently for a new battery until equilibrium is reached. Further adjustment will only be required from time to time as the battery ages.

As to maintenance, individual cell voltages should be read and the readings recorded every three months. If one or more cells are more than 0.05 volts below the average voltage of the battery, the specific gravities of all cells should be noted for record and the battery given an equalizing charge (an additional charge to bring the low-reading cell or cells up to average). This is usually accomplished by charging (i.e., passing current through) the battery at the finish rate until there is no increase in the specific gravity of any cell in question over a three-hour period.

If cell voltages are uniform, specific gravity readings need not be taken and recorded more than once a year.

The addition of water to the battery cells has a very important bearing on their performance. Installations operating under well-regulated conditions do not need water more than semi-annually and this period may even extend to a year before electrolyte levels drop below the low level mark. When adding water, the high level mark should not be passed, as subsequent gassing when fully charged may cause cell tops to become wet. The level should always be maintained between the high and low-level mark on the jars.

If electrolyte levels are allowed to fall below the tops of the plates all such exposed areas become inactive, putting excessive loads on the submerged portions. Loss of battery life results.

Ordinary tap water often contains impurities injurious to batteries and should not be used unless it has been checked. Most battery manufacturers will analyze water for their customers and advise whether it is satisfactory. To be on the safe side, distilled water should be used unless it is certain that tap water is suitable.

Sometimes it may appear that certain cells need acid rather than water as they may seem to be consistently low in gravity when fully charged. The addition of acid is rarely necessary however, since in normal operation it is not lost from the cells. Only in case of spillage, excessive charging which causes considerable spraying of acid, etc., can it be lost. It is best to call on the manufacturer's representative for advice if it is felt that an acid addition is required.

If for any reason a lead-acid battery stands idle before installation or is removed from service for any length of time, it should be given a freshening charge. This charge should be repeated monthly during the stand period. The battery should be given a thorough equalizing charge before being returned to service.

In alarm systems, the amount that a properly-operated battery is discharged during emergency operation for periods as long as twenty-four hours, is so small that it may be re-charged in a short time by adjusting the rectifier to supply current to the battery at a higher rate. When batteries have been restored to a fully charged condition, the rectifier output should be returned to normal.

From the above discussion it readily can be seen that the installation and maintenance of the storage battery in fire alarm systems is a comparatively simple operation. However, the recommended maintenance procedures, simple as they are, must be religiously followed, or the result may be an inoperative alarm system when it is needed most.

N. C. Fire College Meets

The 21st annual fire college and drill at Charlotte, N. C., drew over 400 fire officials and fire fighting trainees to Charlotte on May 11, 12, 13. The school and drills were held at Firemen's Hall on East Seventh street.

Because of the illness at his home in Raleigh of State Fire Marshall Sherwood Brockwell, Chief Charles L. Burkett of the Salisbury, N. C., fire department, served as director of the school.

Classes were held morning, afternoon and night during the three-day meet, with a dance Friday night for the visiting firemen and their wives and friends.

The college meeting was called to order Wednesday morning by George W. Gardner of Greenville, S. C., president of the State Firemen's Association. An address of welcome was made by Mayor H. H. Baxter.

D. G. Spencer.

BATTERY RECORD CARD
FLOATING BATTERY SYSTEM

Location No. _____ Used for _____

Type and Size of Battery _____ Date Installed _____

Rectifier: Type _____ Serial No. _____ Date Installed _____

Year 19.....		Individual Cell Voltages and Gravities Take Readings With Battery Charging From Rectifier CELL NUMBER						Average Cell Temperature	Constant Load from Battery	A. C. Power Supply	Rectifier Output in Milliamperes		Quantity Water Added	Remarks
		1	2	3	4	5	6			Voltage	Found	Left		
		Fully Charged Specific Gravity **												
Date	Volts													
	Gravity													
	Volts													
	Gravity													
	Volts													
	Gravity													
	Volts													
	Gravity													
	Volts													
	Gravity													
	Volts													
	Gravity													
	Volts													
	Gravity													
	Volts													
	Gravity													
	Volts													
	Gravity													
	Volts													
	Gravity													
	Volts													
	Gravity													
	Volts													
	Gravity													
	Volts													
	Gravity													
	Volts													
	Gravity													
	Volts													
	Gravity													

* Measure and record rectifier output only before and after any change in the adjustment that may be required, i.e., either increasing or decreasing the output. Cell voltages should be recorded before making any change in the rectifier adjustment.

** After a new battery installation has first been brought to its fully charged condition with the high rectifier setting take a specific gravity reading of the electrolyte of each cell and record at the top of this card directly under "Fully Charged Specific Gravity". Also include average cell temperature. This will provide a record of the fully charged specific gravity for each cell against which future readings may be compared.

Fig. 3. Battery Record Card (½ Size). Data Gives Case History of Battery

CAMBRIDGE FIREMEN ENCOUNTER HANDICAPS IN 3-ALARM WORKER

Delayed Alarm, Heavy Toxic Smoke, Freak Construction and Crowds of Curious, Highlight $100,000 Fire.

A GENERAL alarm fire of suspicious origin swept through an entire business block in Cambridge, Massachusetts on May 1, 1949, causing an estimated loss of $100,000.00. Seven firemen were hospitalized for injuries and eleven others were treated for smoke inhalation.

The cement and wood, one story building was triangular in shape and was dubbed the "Flatiron Building" by the people of the North Cambridge section. It housed various establishments such as Paul's Tire Shop located at the vertex of the building formed by the intersection of Cedar Street and Massachusetts Avenue, the Bell-in-Hand Cafe, the Genoa Grocery, and the Thomas J. Hartnett & Co., a liquor store; at the base of the triangle Harvey Street, were the Harvey Fish Store and the North Cambridge Italian-American Club. The Massachusetts Avenue stores had rear doors on Cedar Street permitting passage directly through the building.

At 5:30 P.M. a passerby came running into the Bell-in-Hand Cafe, leaving the windward door open behind him, and told the bartender that smoke was coming out of the Tire Shop. At the same time another bartender in the same establishment noticed flames coming from the ceiling at the far end of the room. The twenty patrons of the establishment were ordered out and the owner with the bartenders dragged out two television sets into the street. No one, however, closed the windward door or thought to immediately send in a fire alarm. Instead, bartenders threw glasses of water at the flames which were licking through the crevices of a three-foot false ceiling. Meanwhile the fire worked its way through this ceiling, eventually spreading through the entire building.

A passerby who saw the smoke coming from the front of the structure pulled in the first alarm at Box 79 at 5:40 P.M., fully ten minutes after the fire was first noticed.

The first arriving fire company, Engine 4, pulled up in front of the building on the leeward side. The wind at the time was blowing about twenty-five miles per hour. The firemen on the hose wagon of Engine 4 advanced booster lines into the building but were quickly repelled by the acrid smoke from the Tire Shop. Pumper 4 hooked up at a hydrant across the street and laid in three 2½" lines. The other first alarm assignment companies, Ladder 4 and Engines 1 and 8, drew up on the windward side of the building. Protected somewhat from the heavy smoke by the wind, these later companies did not experience as much trouble as the men on Engine 4. They were able to advance two 2½" lines into the rear of the Bell-in-Hand Cafe which was entirely enveloped in flame, due to the draft created by the brisk wind which came through the doors left open by fleeing patrons.

Deputy Chief Kilfoyle radioed a second alarm at 5:42. The second alarm companies were ordered to open up smoke vents in the roof to lessen the punishment being taken by their fellow firemen in the effort to get to the seat of the fire. The discharge of the pungent gases from burning rubber, tar paper and other combustibles through the roof allowed firemen to enter Paul's Tire Shop with hand lines. The firemen experienced considerable difficulty in vent-

Photo by W. M. Reinhardt, Jr.

Cambridge, Mass., Fire at Its Height

Photo by P. M. Cronin

Opening Up for Ventilation Proved an Arduous Task Because of Unusual Construction Employed in Roof

*FIRE ENGINEERING is indebted to two of its correspondents for this consolidated article and illustrations. They are Philip M. Cronin and Wm. Reinhardt, Jr., both of Cambridge, Mass.

ing the roof because it had a cement layer several inches thick covering wooden planking, the whole being overlaid with a thick coating of tar and gravel. About ten holes were cut through this roof and several 2½-in. lines were operated through the openings.

Even after firemen were able to effect some top ventilation, the acrid smoke continued to lie close to the ground, due no doubt to the very high humidity at the time, causing heavy casualties among the fire fighters. A total of fifteen were sent to the hospitals and seven treated on the scene. Every available mask, including self-generating oxygen, air-demand type and service type was pressed into use. An emergency first aid station was set up around the department's Rescue unit and an ambulance shuttle service was maintained by the Police Department between the fire and the hospitals.

Men worked in relays, but in spite of this several firemen were forced to retire from the scene because of exhaustion.

The gruelling struggle to control the fire in the hanging or false ceiling of the inn and walls of the maze of irregular rooms together with shortage of men and other drawbacks, impelled Deputy Chief Kilfoyle to order a third alarm. This was at 5:57 P.M.

This brought all remaining apparatus in the city except Engine 3 which remained at quarters. Several other pieces of equipment from neighboring cities responded, bringing the total to twenty-five pieces of apparatus. Deputy Chief O'Connor, acting chief during the absence of Chief John R. Collins, who was in Europe, responded on the third alarm. The fire was brought under control at 7:15 P.M., almost three hours after the first alarm.

Altogether eighteen firemen were injured during the progress of the blaze, two of them Somerville firemen who responded on the mutual aid call. Among those treated at the scene for smoke inhalation were: Privates Allen, McGaughlin, Bibeau, Murphy, Kearns and Bosworth. Treated at the Cambridge City Hospital and released were: Captain Jefferson, punctured right hand; Privates Conlin, foot puncture; Carvahlo, lacerated wounds of the right hand; Cotter, (the President of Firemen's local A. F. of L.); punctured wound of the foot; McDonald, burns of the neck and Anderson, fracture of right hand. Firemen held at Cambridge City Hospital were: Captain Walsh, smoke inhalation; Lieutenant William Cremins, smoke inhalation; Privates Mace, possible leg fracture; Madden, smoke inhalation and Flahive, smoke inhalation. At the Mount Auburn Hospital Lieutenant Patrick Cremins was held for smoke inhalation.

Lieutenant O'Connor, attached to the State Fire Marshal's office, was called in to investigate the origin of the fire.

CHRONOLOGY OF ALARMS

5:40 P.M., First alarm—
Deputy Chief Kilfoyle; Ladder 4; Engines 1, 4, 8; Rescue 1; High Pressure Fog Wagon 1.

5:42 P.M., Second alarm—
Ladder 1; Engines 5, 6, 9; Lighting Plant 1.

5:57 P.M., Third alarm—
Acting Chief O'Connor; Ladders 2, 3; Engines 7, 2; Engines 5, 6 (Somerville); Engine 2 (Arlington); Cambridge Gas & Light; all off-duty firemen.

9:30 P.M.—all out—

Photo by W. M. Reinhardt, Jr.

After Cambridge, Mass., Fire Had Been Brought Under Control

GAS FROM UNDERGROUND LEAK CAUSES FATAL HOSPITAL BLAST

Seepage of Natural Gas From Rusted Pipe Into Hospital Cold Storage Plant Creates Explosive Atmosphere

By T. R. Jones
Engineer, Veterans Administration

AN unusual explosion which had fatal results occurred in the cold storage plant (Building 62) at the VA Hospital, Temple, Texas, about 10:20 A.M., April 28, 1949.

The structure in which the blast centered is a one-story building of brick and tile construction with raised concrete floor and frame wood joist roof.

It is used exclusively for cold storage and a butcher shop. The storage rooms in this building are insulated with cork. The refrigeration machinery and refrigerant storage is in a room cut off from the remainder of the building. Ammonia is used as a refrigerant, direct expansion, suction pressure maintained between 0 and 20 pounds, discharge pressure around 150 pounds, with vapor type condenser on the outside of the building. The room in which the explosion occurred is a low temperature room, the temperature being kept between 0 and 8 degrees.

The door of this room had been opened for inspection for a party of Gray Ladies, who were making a tour of the building, directed by Special Service Officer Maurice L. Harper. This was approximately ten minutes before the explosion. At that time no gas or ammonia odor was noticed.

While these Gray Ladies were boarding the bus on the outside of the building, the butcher, John Davis, and a cook, Samuel Gage, entered this room, at which time the explosion occurred. Davis' clothing was ignited and he was severely burned over practically his entire body. He also inhaled some flame, dying just before midnight April 28. Gage was badly burned about the face and chest and was in a state of extreme shock at last report. Mr. Harper, when he heard the explosion, ran outside and smothered the fire on Davis' clothing with his jacket, receiving rather severe burns on both hands.

The explosion appeared to have originated in a corner of the freezing room. It lifted approximately 20% of the roof of the structure from two to ten inches, and scorched the door of another cold storage room across the corridor. Damage is estimated at from $1,500 to $2,000.

Investigation developed that there was a minute leak in a natural gas supply line outside the building 36 feet from the corner of the building where the explosion occurred. This supply line is of 1¼-inch ordinary black iron pipe, carrying a pressure of ten pounds. It supplied gas to a small burner in the office portion of this building. There is also another 1¼-inch gas line, supplying gas to the rendering room in this building. Neither of these gas pipes goes under the building involved, as they enter the structure through the outside wall above floor level.

It was originally thought that the leak in the first mentioned 1¼-inch line had allowed gas to seep underneath the

building and into the cold storage room. However, at first this appeared very unlikely, in that the cold storage room seemed to be tightly sealed with concrete floors, plaster walls and ceiling.

The refrigeration mechanic reports that a test for ammonia leaks was made in the freezing room a day before the explosion and no leak was found, nor was there any odor of natural gas, which there would have been had there been any explosive concentration of gas in the room at that time, since this gas is treated for easy detection.

G. F. Peck, Manager of the Lone Star Gas Company office in Temple, was requested to make an examination of the area with an Explosimeter which he did on the morning of April 29. The gas had been cut off this particular line during the previous afternoon when the leak was discovered. It was found that the entire ground between the leak and the building contained explosive gas. A hole was cut through the floor of the refrigeration room, and it was found that the soil beneath the floor was saturated with a highly explosive concentration of gas.

No doubt the gas had been leaking for some time and since the pipe was 30 inches below the ground surface in what is known as a porous caliche soil and the top soil is approximately 18 inches deep, it is assumed that ordinarily during dry weather the gas would rise to the surface; however, recently there had been a great deal of rainfall thus causing the top soil to seal. The gas seeped through the porous caliche underneath the building and gradually seeped into this cold storage room.

As to the firing of the explosion, the cause will never be known, but John Davis' cigarette lighter and an empty package of cigarettes were found just inside the door. He could have lighted the cigarette lighter or, in turning off or on the electric switch at the door, could have caused the firing.

Since the condition of this pipe was found so poor when dug up and examined, the Engineer Officer has arranged with the Manager of the Gas Company for the use of his Explosimeter in examining all other lines where the gas lines enter the buildings at this hospital.

Immediately after the explosion, all ammonia was pumped from the coils and the machinery shut down. Meats from the room where the explosion occurred were moved across into another storage room. At 5:00 P.M. April 28, the machinery was started up and all cold storage rooms, except where the explosion occurred, were put back into operation.

As an outcome of this incident, it is recommended that when the two medium pressure lines are renewed from the 3-inch supply line the pressure regulating valve be installed near the 3-inch supply line.

Board Offers Self-Inspection Blank for Summer Camps

A comprehensive self-inspection blank for fire safety at summer camps has been made available to all camp leaders and others by the National Board of Fire Underwriters. The checklist covers every phase of fire prevention for campers and is designed to set up minimum standards of camp fire safety.

The checklist can be had by writing the National Board of Fire Underwriters, 85 John St., New York 7, N. Y.

RADIO IMPROVES EFFICIENCY OF DETROIT FIRE DEPARTMENT

Speeds Up Service and Reduces Apparatus Travel; Proves a Money Saver

By Paxton Mendelssohn
Member of Board of Fire Commissioners, Detroit, Mich.

COMMUNICATION by radio in Fire Departments can no longer be considered new or novel. Many of the smaller Fire Departments have been fully equipped with two-way sets for some time and quite a number of the larger cities have to some extent been using one or two-way radio communications, therefore, it may seem strange that there could possibly be any further interest in describing the operation of the radio communication system in the Detroit Fire Department. What follows, however, may be of some value, and our experiences may be useful to others.

It has been stated in a previous article that Detroit is one of the last of the larger cities to acquire two-way radio communication in their Fire Department but being one of the last (the first set in our Chief of Department's car having been installed only last December), the program started contemplates going "whole hog." In this short period of approximately three months we now have installed and in operation 58 two-way sets and have been allowed 30 more such installations in 1949. all of which will be in use before the snow falls again this year.

Some of the cities, both large and small, which have radio communication in their Departments use the combined service of a joint Police and Fire Broadcasting Station. This was also suggested for Detroit. But because both Police and Fire Departments are emergency organizations, if an emergency takes place both Departments get busy at the same time, and one gets priority to the detriment of the other. This argument being sound, we of Detroit have our own Fire Department Broadcasting Station and system totally separate and apart from the Police Department.

Location of Equipment

Our control console is located in the Dispatching Room of the Central Fire Alarm Office, whereas our actual broadcasting equipment and tower are located some miles distant of our Training School, which location was found by tests to be the most suitable in the city for the broadcasting mast. Obviously the contact between our console and broadcasting station is by underground cable. Two such cables have been installed along different and widely separated routes so that any interference in one circuit does not affect the other.

Our call letters are KQA-205. Broadcasting frequency is 154.31 M.C. and Mobile Unit Transmitters speak on 153.95 M.C.

Although we can still be considered in our radio infancy, we were able to benefit by the experience of the Detroit Police Department, one of the pioneers in radio communication. We, therefore, attempted to adopt their method to our type of operation, modifying from time to time such rules and regulations that were found best suited to Fire Department operations, at all times keeping in mind the rules and regulations of the F.C.C.

Fire Departments that are more experienced than Detroit have quickly realized the benefits of flexibility of operation in the use of radio, but in the brief three months we have had radio these benefits have even exceeded our expectation, and while some of these experiences may not be new to others, we have found situations and uses beyond that which we ourselves had foreseen.

With 58 sets immediately available and 30 more sets coming in the near future, our first problem was to find a practicable method for sequence of installation. We started, of course, with the Chief of Department, following with Assistant Chiefs and all Battalion Chiefs, which within a short time gave us at least one two-way radio at every box alarm and practically all still alarms. We next equipped our 5 Rescue Companies and Fire Boat and, aside from all Division Chiefs and Commissioners, we followed in sequence with Engine and Ladder Companies in the busiest stations, presently totalling 16 Land Engine Companies and 10 Ladder Companies. We also have an installation on our radio engineer's test car and one of our telegraph emergency repair cars. By this method we have built up a pattern of distribution that for the time being gives us one or more sets at every fire in any part of the city, and as more sets are installed our pattern will become more complete, and our program contemplates that eventually all Fire Companies will be equipped as well as Department Doctors and other emergency repair units.

It will be seen that with this many sets in use, a multiple alarm assignment would bring many sets to one fire but there had to be established one definite point of contact at such multiple alarms so that Central Office Dispatchers could deliver messages and communications to the fire grounds. As the Department Ambulance responds to all multiple alarms, where the attendant assumes the duty of Orderly at the Ambulance, and where at least one or more Department Doctors are stationed, the Department Ambulance has been established as the base point of communication at all large fires. If for any reason this cannot be followed, the contact is established at a designated Chief's car, whose aid remains on radio duty releasing all other personnel for direct attention to the fire.

A summary of installations by classifications, as of May 1949, follows:

Chief of Department
Assistant Chief
Second Assistant Chief
12 Battalion Chiefs
5 Division Chiefs
3 Commissioners
16 Land Engine Cos.
10 Ladder Cos.
5 Rescue Cos.
1 Fire Boat
1 Ambulance
1 Telegraph Emergency Repair Car
1 Radio Test Car.

Although, as stated, our program contemplates all Fire Companies will eventually have two-way radio, nevertheless, there is no intention to discontinue the use of code signals to or from the alarm box by telegraph. These code signals can and are still being used in combination with radio by and between companies not yet equipped with radio. The Central Office Dispatcher relays code messages to those officers and fire companies who have radio. Such operations may sound unnecessary when all companies have radio, but there is always the possibility of temporary tube or minor mechanical trouble as well as blind spots or unusual weather conditions when contact may be noisy or difficult. These conditions may be considered as exceptions but are always possible. Fire Department operations being emergency, where delay cannot be tolerated, every precaution should be taken to maintain prompt understandable communication at all times.

A few examples of the combined use of telegraph and radio follow:—A box alarm near the city limits in the late evening took two Engines and a Ladder Company not yet equipped with radio, but the Batt. Chief had radio. He had a long run while the first due Engine was very near the location. Upon arrival it proved to be a false alarm, and the Commanding Officer of the first due Engine transmitted the false alarm signal from the box. Dispatch radioed the Batt. Chief, who had not gotten half way, thereby cancelling a long useless run and putting the Chief immediately back in service "On the Air."

Box alarm for three Engines, Ladder, Rescue Company, and Chief. Very long run for Rescue. Chief reports very small fire, do not need Rescue. Rescue stopped and returned to quarters by radio and immediately "In Service on the Air." Rescue dispatched by radio to second fire while enroute back. Above example, one of many similar as we have five Rescue Companies that respond to about 60% of all first alarms.

Still alarm for Engine, Ladder, Batt. Chief. A residence. Radio equipped Engine and Chief. Ladder not equipped. Engine reports trouble enroute and cannot proceed. Dispatch sends another Engine, also with radio. Chief reports by radio small fire, truck handling, Engine not required. Fill-in Engine stopped by radio before one-third way to fire, returned to quarters and "On the Air in Service."

Batt. Chief prevented more than a second alarm by quick report. Apartment house, largely involved, second alarm by radio a block away before actually arriving at fire. Quick stop prevented a larger fire.

Five alarm fire in R. R. Shops and Yard. First alarm from Box in building involved. By arrival of first due Companies and Chief, building so involved Box not accessible. Second, Third, Fourth and Fifth alarms all transmitted by radio from R. R. Yard, considerable distant from next nearest Box, saving much valuable time. During progress of this Fifth Alarm, a firebug touched off seven garages five miles away but all in a half-mile area. Dispatch able by radio to notify Chief of Department, Fire Marshal, and Insp. of Arson Squad, all at five alarm fire, and investigation immediately started; subsequently led to apprehension of arsonist.

"On the Air" is a new one. In times past a Fire Company was "In Service" at quarters, "Out of Service" while on a run, working at a fire or enroute back. With a radio, a Company is "Out of Service" only while working at a fire, or an Engine Company which has used too much hose at a worker to be of service while returning to quarters, but Chiefs, Rescue Companies, Ladder Companies, and even Engine Companies who have used little or no hose, are "In Service" "On the Air" immediately they start back to quarters. Recently one of the radio equipped Engine Companies responded by air to three separate fires before returning to quarters from any one of them. It's a daily occurrence with the Rescue Companies and Battalion Chiefs.

There is no end to flexibility! This flexibility, with its increased and speeded up service and protection, might be construed as permitting coverage with less companies, thereby the oft repeated cry of reducing the number of fire companies with the resultant reduction of expense, but this is a false viewpoint. The use of radio does not permit less companies which are needed as always when there may be one or more multiple alarms or a series of many single alarms, with the required covering in, but radio does permit the greater use of companies, thereby giving the public better and faster protection than was possible before the advent of two-way radio dispatching.

With many Companies in all the branches of service radio equipped, the Dispatcher has the picture of his Department before him constantly, can use and dispatch his companies to the best advantage quickly and he does save many miles of travel for apparatus with all the consequent saving in operational expense. It is, therefore, quite apparent that the extensive use of radio will not alone pay for itself in a relatively short time, but will save operational expense thereafter, and will give improved fire protection to the public.

In the final analysis Fire Departments are expected to protect life and property promptly and efficiently, not by reducing the service but by improving it. If better service with the companies available can be given, eliminating the necessity of additional companies and equipment, then a great step forward will have been accomplished.

Two-way radio in the Fire Department is doing just that!

Another Record-Breaking Relay Ends Water Shortage

In the May number of Fire Engineering there was told the account of the near-mile-long relay operation that delivered emergency water supplies to Taunton, Mass.

Now comes the story of an even greater relay operation in which volunteers brought relief to the community of Ripley, N. Y., near the shores of Lake Erie.

When a recent water shortage threatened that town, six fire pumping units, 7,500 feet of fire hose, a hypochlorinator and firemen and volunteer workers set up an emergency system that delivered 200 gallons of potable water per minute to the town.

Lake Erie furnished the water for the emergency system. However, to get the water from the lake up over a 32-foot cliff, workers had to first cut away five

There's "No Ceiling" to This Clothing Store Sale!

Firemen and salvage corps men view the wreckage of false ceiling which collapsed with a crash onto the first floor of the Ripley Clothes Store, Philadelphia, Pa. Overloaded by water leaking from a faulty sprinkler system, the ceiling gave way, taking with it framework and fixtures. Five persons were injured, one possibly seriously. There was no fire.

feet of shale rock to provide a platform for a lift pump.

Above this pump at the top of the cliff, a hypochlorinator introduced a strong solution of hypochlorite to make certain the lines were completely disinfected. From the hypochlorinator station a civilian defense pumping unit sent the water through fire hose 2,000 feet overland through a grape vineyard, to a second pump; from there the water was sent through four other pumps, passing across roadways and open fields through more than 7,000 feet of fire hose until it finally entered the Ripley water system via a hydrant connection.

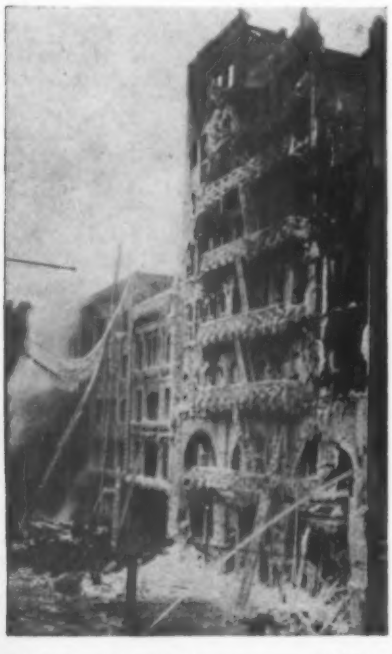
OLD "HOODOO" FIRE ALARM BOX HAD LONG AND TRAGIC RECORD

Buffalo, N. Y., Box 29, at Seneca and Wells Streets, Yields Tale of Conflagration, Death and Rescue

By Paul C. Ditzel

FIREMEN are usually a superstitious lot. And Buffalo, N. Y., firemen are no exception. Old-timers recall their "hoodoo" fire alarm Box 29 at Seneca and Wells Sts., and for good reason. Fire department legends through the years have made Box 29 a traditional topic of conversation whenever local firemen gather.

Peter Ambirk, 62, a fireman attached to Hook and Ladder 2, at 43 South Division St., is one of the few men still in the department who remember fighting serious fires at Seneca and Wells. His company is first due truck at the box which once looked upon a district of tenant factories and cheap hotels.



A Pillar of Smoke Rises from an Old-Time Steam Pumper (Lower Left) as It Sends Water Into the Ice-Coated Ruins of a 1907 Fire in Buffalo, N. Y. Alarm Was Sounded from the City's "Hoodoo" Box 29 at Seneca and Wells Sts. Box 29 Has Been the Scene of Many Conflagrations in Buffalo History. The Station's Odd Name Came After Many Multiple Alarm Fires Resulted in Injury or Death to Buffalo Firemen and Millions of Dollars Loss to City Merchants

"Box 29 usually meant trouble and sometimes bad luck for us. Back in the old days when that box was pulled, firemen used to hitch-up the horses even though the company didn't roll on the first. Nine times out of ten Seneca and Wells seemed to go into a second or third alarm, and many firemen were killed or injured there. That's how it got its name 'hoodoo.'

"But none of the new fellows would remember the fires. They have only been around here for 10 years," he chuckled.

Another old-timer who remembers conflagrations sounded from Box 29 is retired First Battalion Chief Lavergne P. Allen, 69, now living at 356 Auburn Ave. He responded to alarms in 29's area for more than 31 years while attached to Engine 1, first due pumper.

"There were more big fires from Box 29 than I can remember," he declares. "My most memorable one there was the three-alarm Columbia Hotel fire early one wintry morning in 1907. During the blaze a wall collapsed burying more than 20 firemen. I was a "beau" on Engine 1. We were operating a hoseline atop the four-story Burt Candy Company next to the Columbia. When we saw bricks start to fall we dropped the line and ran for our lives. Fortunately, I was not injured.

"Immediately, we started digging through the debris for trapped men. I could hear several of my close friends calling for help but it was several hours before we could reach them, and three were dead.

"Those killed were attacking the fire from an adjoining 2-story building. The weight of the falling matter drove the 2-story building into its own basement."

Fire Department records bear out Chief Allen's memory. For at 5:15 A.M. on January 28, 1907, Box 29 was pulled for a $500,000 three-alarm and one special call fire at the 8-story brick Columbia Hotel Building, 101-7 Seneca St.

The three firemen killed were Lieut. William J. Naughton, Fireman Stephen E. Meegan, both of Engine 8, and Fireman John R. Henky, attached to Engine 4. Twenty firemen were injured in the collapse.

As a postscript to the story, present Buffalo Fire Commissioner Joseph S. Masterson helped fight the fire while then serving as a substitute fireman attached to Engine 9.

Retired fireman Frank J. Green, 76, of 515 East Utica St., also remembers many serious fires sounded from Box 29. He too was attached to Engine 1. Fireman Green entered the department in 1900 and retired 38 years later.

"Conservatively, I would say I attended 10 greater alarms at that location. We always looked for an extra alarm when we rolled to that location in our horse-drawn, or in later years, motor-driven apparatus.

"I vividly recall the several fires we had at the old Buffalo Paint and Glass Company, formerly at 102 Seneca St. And then there was the big one at the Stoddard Brothers Drug Company. Martin Haley of Truck 2 used a civilian ladder he found on the roof of a building adjoining Stoddard's. He attempted to use the thing to get on top of the drug concern. But the ladder broke and he fell to his death.

"Particularly do I remember that fire because of the rapid spread of the flames. In no time the entire building and its contents were involved. I can still see the horse-drawn apparatus pumping. And there were even a few of the then new motorized rigs."

Fire records show the blaze Mr. Green refers to occurred on July 19, 1919, at 9:15 A.M., at the four-story building occupied by the Stoddard Bros. Drug Company, 86-88 Seneca St. Box 29 was again run for the three alarm fire, which felled 30 firemen. The blaze was believed to have originated in the basement from spontaneous ignition of chemical supplies. All floors collapsed at the fire, which took three days to extinguish.

Reports going back before the turn of the century disclose that on Feb. 2, 1889, at 2:41 A.M., Box 29 was pulled for the "big Seneca St. fire." The blaze involved the Broezel House, Root and Keating Co., S. S. Jewett Co., the Arlington Hotel and other buildings. One fireman, Richard D. Marion, of Engine 10, was killed by a falling wall.

In September, 1913, a four-alarm fire at night swept the Burnberger Popcorn Company, the Eureka Coffee Company and again the Broezel House. Damage was set at $400,000.

Although the response to Box 29 has changed over the years the present assignment calls for the following companies: Engines 1, 12 and 13; Trucks 2 and 8; Auxiliary 1, High Pressure 1; Water Tower 2 (at present not in service); the First Battalion Chief and the Deputy Fire Commissioner. The location is within the high pressure fire service district so high pressure pumps are started when No. 29 is sounded.

According to Deputy Fire Commissioner Harold G. Rainey, "Seneca and Wells is fast being replaced by Box 526 at Elk and Babcock Sts. as our jinx. Every time 526 taps in we look for trouble. Used to be Seneca and Wells was our 'hoodoo' box. But occupancy in that area has changed somewhat and most of the fire hazards have been corrected or burnt out."

The most recent extra-alarm fire at Box 526 occurred on Feb. 14, 1948, when a three-alarm blaze at the Socony-Vacuum Oil Refinery killed two workmen. "Considerable damage" was caused to a condenser-box in which the fire originated.

(*Continued on page 449*)

Panicky Hotel Guests Jump to Escape Small Fire

A fire that might have had more tragic consequences occurred in the early morning hours of April 8th last, in the 55-year-old Caldwell Hotel, in Paris, Tenn. As it was, a number of guests in the two-story building leaped from windows, spurred by panic as smoke filled the corridors and some rooms.

The Caldwell Hotel, built in 1894, is located in downtown Paris and faces the tracks of the N.C.&St.L. railroad. It is of typical old-style wood joist and brick construction. It has three wings, two of which have back stairways. The third wing, extending east, has no stairway and it was chiefly from this wing that the guests began jumping from windows when they thought they were cut off from the main stairway leading to the lobby. There are no fire escapes, no sprinklers or fire detection system. A ready-to-wear shop, wallpaper store, a barber shop and insurance office occupied quarters on the first floor of the building.

The fire started in the room of a guest, who said she was awakened about 5:00 A.M., not by the fire but by a train on the N.C.&St.L. tracks outside her window. It made a lot of noise, she said, and she thought there was a wreck. Shortly afterwards, she said, she heard a crackling noise and discovered one of her curtains on fire.

The guest hurried to the lobby and notified the night porter to call the fire department. He had trouble getting the operator, it is reported, and the guest returned to her room where she had an outside telephone and called the telephone operator to get the fire department.

By this time the room was afire. The fire spread rapidly from her room into the mezzanine and to the main stairway to the lobby.

The guest, a nurse, had an electric refrigerator in her room, but said it was disconnected. She had no idea how the fire started.

When firemen under Chief Foster Brown arrived at the hotel, smoke and fire were coming from the main entrance and upstairs windows of the building. Cries of guests could be heard in the east wing and firemen hurried into an alley separating the hotel from the Riley Furniture Company on Washington Street. When hotel guests started jumping, firemen, who had no life net, attempted to break their falls, and it is said this prevented jumpers from receiving more serious injuries.

As rapidly as possible, ladders were brought into use and the guests who remained more calm and waited, were successfully removed by their means. A man and his 12-year-old son and two other male guests all leaped from second floor windows. A woman with her 20-months-old baby jumped from a second story window to a one-story structure behind the hotel, from which firemen removed them safely.

Only one guest was seriously injured and he was hurt when he landed on his side in jumping to the alley. He and three other men were asleep in a single room when awakened by the hotel porter and when they opened their door and were confronted by smoke and heat, they opened the window and jumped.

Firemen turned in an extra alarm and the sixteen members of the department, aided by civilians, had the fire under control within an hour. The first lines were taken into the lobby of the hotel and directed to cover the main stairway, which was not involved by the fire. Most of the fire damage was confined to the one room and the mezzanine although stores and other parts of the hotel suffered heavy smoke and water damage.

The volunteer fire department, led by Foster Brown, has two pumpers, one 750 and one 500 GPM. The 500 GPM pumper took water at a hydrant directly in front of the hotel. The 750 pumper located at another hydrant about 500 feet distant.

No one would have been injured, said Chief Brown, had they waited for the department to raise ladders. The total estimated loss was $12,000.

AMERICAN FIRE CONTROL METHODS PROTECT HISTORIC HEIDELBERG

Germans Constitute Personnel, but Units are Under Control of American Officers; An Efficient Organization

A Staff Report*

HEIDELBERG, Germany, famous in song and story, is protected against fire by a large force of fire fighters who maintain vigilant guard in the best tradition of the American fireman.

The organization, headed by Lt. Col. W. Freeman, Post Engineer, is under the immediate supervision of Ernest Albertsen whose title is Fire Marshal of the Heidelberg Area.

Ernest Albertsen is well fitted for his post, having during his career as a fire fighter, served as Fire Chief of Springfield, Ill., for three and one half years. During the recent war he supervised fire prevention operations at a large ordnance plant near that city. He also received training at the University of Illinois and Purdue fire schools.

The Fire Marshal's protective network around Heidelberg includes two Fire Control Centers, one in the City of Heidelberg, the other in Mannheim, through which the calls and coordinated effort are channeled. Switchboards are located in Post Headquarters in Heidelberg, and the Military Police Station in Mannheim. Each switchboard is manned 24 hours a day. The two areas are zoned, and each building, unit and installation is entered on a card index according to location of the zone.

The cards serve somewhat like assignment and response cards of American municipal departments, showing the control operator which company to dispatch to cover (cover-in) the zone of the companies answering in case of second alarm. In case of a fire call to Heidelberg Military Post Headquarters, the companies of Station 1, EUCOM Headquarters, and from Station 8, located at 30 Schroederstrasse, would be dispatched, while the company from Station 3, Tompkins Barracks, would relocate in Station 1.

Two mobile units are always dispatched to a building fire and one piece of equipment to a vehicle fire.

*Based on information supplied by Headquarters, European Command, Heidelberg Post, and U. S. Army Photo Service.

U. S. Army Photograph

Werner C. Engelman Sitting at the Fire Control Switchboard in Heidelberg While Ernest Albertsen, of Springfield, Ill., Fire Marshal of Heidelberg Post, Looks On. This Switchboard Has Direct Lines to All German and American Fire Points Throughout the Heidelberg Area

The Fire Stations located at Heidelberg, Weinheim, Spinnelli Barracks and EUCOM Headquarters are equipped with trucks known as "Class 325 Pumpers" which is "standard" in the area, having a 300 GPM pump, and trailers of the "Class 1000," (O.C.D. type).

At Tompkins Barracks, a new type of truck has been introduced in an effort to develop replacement for the Class 325 models, all of which are war-worn from hard work or from lack of service. This is known as the "Hanau" model. It is a standard 6 x 6 GMC chassis with a class 1000 pumper with the panel on the right side of the truck and the hose and booster body mounted behind the pump unit. It is named "Hanau" after the city in which it is being assembled.

Another addition to the present equipment is a light truck that is specifically designed for "trouble-shooting," for replacement of "static" equipment such as foamite extinguishers and other fire protection equipment. This corresponds somewhat to this country's utility or emergency units.

Records are kept of extinguishers that are turned in, filled and issued. A card index is also maintained as to number and type of all fire-fighting equipment that is required for adequate protection in all units and installations.

An inspection chart reveals the order in which units or installations are listed in regard to the seriousness of the fire hazard, taking into consideration the number of personnel using a building (occupancy), location, construction, value of supplies and importance of the function that is performed by the unit or installation.

Monthly inspections of fire hazards in all hotels, BOQ's, theatres, schools, shops and other buildings of public assembly, are made and the results entered on the Inspection Chart.

The fire fighting personnel consists of 144 German firemen, two American enlisted men who supervise each fire station, and three N.C.O.'s who are assigned to rebuilding, administration and training. The Heidelberg Fire Department protects $175 million worth of property, it is reported, at an estimated annual cost of maintenance of $334,000.

In the details of fire prevention, "policing" of equipment (committee work) repair and testing of facilities, there is said to be little difference between the Heidelberg department's technique and that in vogue in this country. So, too, with training of personnel.

Firemen Make Good Stop in Old Frame Hotel

Two tenants of the historic old wooden Hotel Dixieland, at Waverly, Tenn., lost their lives and eleven others either were rescued by firemen or saved themselves when an early morning fire raged through the second floor. The Waverly Fire Department, organized only a few months before, held the fire to the upper part of the structure.

The 79-year-old hotel was widely known for its hospitality and famous old antiques, which graced nearly every room. Many valuable pieces on the upper floor were lost in the flames. Some furnishings on the lower floor suffered smoke and water damage.

The dead were Grady Reed, a salesman, who was suffocated while trying to escape from the second floor, and Ariel Lewis, lumber company representative, who died from a fractured skull received when he plunged from a second floor window to the hotel's concrete porch to escape the flames.

The fire originated in an upstairs room occupied by a guest, shortly after 2:00 A.M. and spread rapidly throughout the two-story building trapping the man in whose room it originated and all but two of the eleven guests; these two managed to reach safety unaided. The roomer, in whose room the fire originated was saved. A salesman in the adjoining room spread the alarm and the daughter of the landlady, who lived on the ground floor summoned the fire department.

Some guests became panicky at the rapid spread of the fire and a number slid down improvised bedsheet "ropes" as fire blocked the stairs and fire exit. Firemen attempted to reach Lewis at an upper window but the ladder was too short and before they could get a longer one he dived headlong to the porch.

The fire was under control by 4:00 A.M. John W. Cole, chief deputy state fire marshal, said the quick, efficient response of the Waverly fire department could be credited with preventing additional deaths and injuries among the guests and confining the fire to the second story of the hotel. His investigation disclosed that the guest in whose room the fire started admitted having had several bottles of beer but the roomers denied he was intoxicated. The property damage was estimated at $35,000.

Westchester "Plan" Elects McAuliffe

Fire Chief John S. A. McAuliffe, of Croton-on-Hudson, was unanimously named president of the Fire Chiefs Emergency Plan of Westchester County, N. Y., at its 21st Annual Meeting and Dinner, May 18th. The affair was held at the Larchmont Shore Club, Larchmont, N. Y., where the Plan had its birth. Over 450 fire officers and other officials were in attendance, including invited guests from many states.

Chief McAuliffe succeeds former chief B. Richter Townsend, of Hartsdale, who served as president for three terms. The retiring president was named Coordinator in place of Chief Abbott Griffen of White Plains, who has filled that post since 1942.

Others elected were: ex-Chief Stephen Johnston, Mamaroneck, first vice-president; Chief Joseph Carroll, Montrose, and Chief Irving Wallach, Pelham, first and second vice-presidents; ex-Chief Edward Carney, Chappaqua, secretary; ex-Chief Arden N. Smith, Port Chester, treasurer; Capt. Howard Geer, Rye, financial secretary, and Capt. Cornelius C. Falch, Rye, sergeant-at-arms.

New directors include Chiefs Edward Gall, Sr., Mount Vernon; William Garvin, Yonkers; Wm. McGee, Briarcliffe; James Taxter, Tarrytown; Arthur Page, Mt. Kisco, and Frederick Peduzzi, North Tarrytown. Present directors Roi B. Woolley, Larchmont, and Charles E. Jahne, Pleasantville, carry over another year.

Thomas W. Ryan, Director, and Palmer Harcourt, Assistant Director, New York State Division of Safety, complimented the organization upon its "magnificent record" in furthering mutual aid in Westchester County, and developing a plan which has been adopted by many states and counties throughout the United States.

U. S. Army Photographs

Top: Shown Here Is Some of the Fire Fighting Equipment of Eucom Headquarters Fire Station No. 1. This Is One of the Fire Fighting Installations of the Heidelberg Post. Bottom: The Fire Station Equipment and Men Located in Tompkins Barracks in Schwetzingen.

East Norwalk, Conn., Shipyard Fire at Its Height

Fatal Shipyard Fire

A general alarm fire which swept through the boat yard owned by John Uhl at East Norwalk, Conn., on April 10, caused the death of Mr. Uhl, and sent four Norwalk firemen to the Norwalk hospital suffering from severe burns received while fighting the fire, which caused damage estimated at $150,000.

Mr. Uhl died in Norwalk hospital of first, second and third degree burns received in the fire, and shock, hospital attendants said. He was 68 years of age.

The blaze, pushed by 30-mile-an-hour winds, destroyed about 35 boats in the yard, gutted one home and damaged four other houses, ruined two vehicles and a garage. The fire is believed to have started when a boat owner, working in the bilge of his boat in the boat house and using a hammer and chisel on an exhaust pipe, struck a spark which ignited fumes in the compartment.

All apparatus of the Norwalk Fire Department was summoned to fight the fire, which had gained considerable headway before an alarm was sounded. More than 100 regular and volunteer firemen with nine pieces of apparatus were on duty at the blaze, one of the most spectacular in Norwalk in many years.

TOM MAGNER

Tacoma Department Gets Needed Improvements

Tacoma, Wash., has been one of the nation's best customers for municipal fire fighting equipment in the last four years; and as a result the city now can see a day in the near future when its fire department will have no piece of equipment which was in service prior to 1944.

C. J. Eisenbacher, Chief of the city fire department, announced recently that equipment now on hand or on order would complete the re-equipping of the department, which has been a municipal project for nearly two decades.

Tacoma faces a serious fire fighting problem because of its geography. The city, long and narrow, is squeezed into a peninsula on Puget Sound, with commercialized Commencement Bay on its northern and eastern edges, the open Sound and the Tacoma Narrows on the west. Fire fighters face a problem in getting through heavy traffic for every call which must be answered by equipment based downtown. The industrial tideflats, sprawling over square miles with only a few cross streets and extremely bad bottlenecks at its entrances from the rest of the city, present a particular headache, with lumber and lumber-products mills, chemical industries, docks and wharves, oil storage and naval installations adding to the fire hazards.

In addition, the City department must be responsible for the waterfront proper, extremely vulnerable to fires which cannot be reached efficiently by land-based equipment. Even the city's residential section offers multiple problems because of the predominant use of frame construction, the hazards of grass fires in vacant lots and of brush fires which often approach the status of forest fires in the second-growth timberland near city limits. In Tacoma, as in many other industrial centers, the stimulus of wartime hazards, post-war population and manufacturing have increased the fire-fighting problems.

To combat these various hazards, Chief Eisenbacher has conducted a long campaign for new equipment which has had its reward.

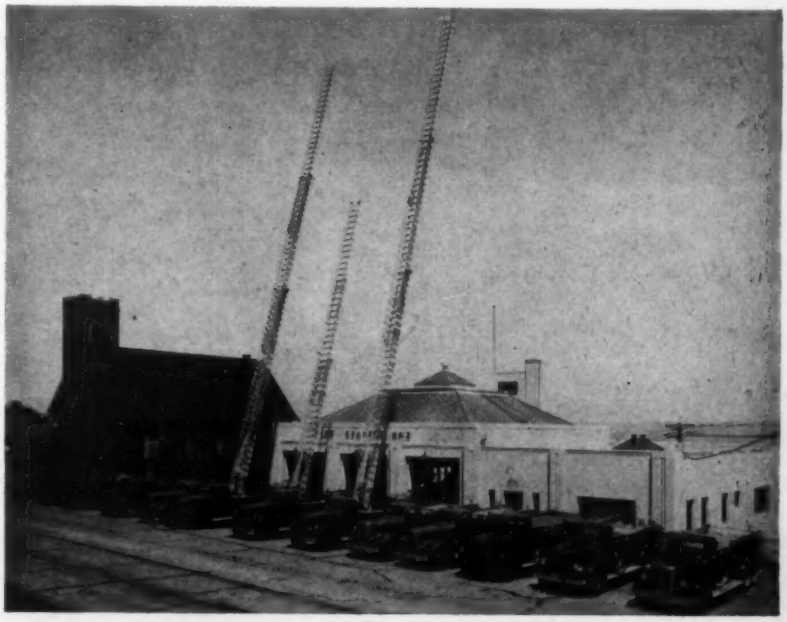
The rehabilitation began in 1944 when every piece of rolling stock in the department was at least fifteen years old. The 1,000 G.P.M. pumper which appeared on Tacoma streets that year stopped traffic as a curiosity—it was so different from the ancient hacks which the fire department had been using.

Once started, however, the program gained momentum. In 1945, the department secured seven new pieces—four Pirsch 1,000 G.P.M. pumpers powered with Hall-Scott "470" engines; and three Pirsch aerial ladder trucks powered with Hall-Scott "400" engines. Two of the ladder trucks have one hundred foot aerials and the other is a sixty-five foot "quint."

Three Mack type 19, 1,000 G.P.M. pumpers were ordered in 1946, and two others (type 95) were ordered in 1947, in addition to a Pirsch 1,250 G.P.M. pumper powered with Hall-Scott "480" and a Pirsch intermediate aerial truck with seventy-five foot ladder and Hall-Scott "400" engine. Orders in 1948 included two 750 G.P.M. Mack pumpers (type 85) and one Gray hose wagon powered with Hall-Scott "480." All staff cars, mechanic's trucks and fire alarm trucks have also been replaced within the past two years, making a total of 32 pieces of new equipment purchased by Tacoma in the past four years.

Adding to the importance of the improvements is the fact that each piece of new equipment is equipped with two-way radio before it is put into service.

In addition to re-equipment on land, the department has also overhauled its city fire boat at a cost of $47,000. Improvements aboard included three new driving engines, Sterling 8 cylinder, of six hundred horsepower each. The boat has an additional 850 horsepower in the two forward motors attached to the pumps only. The boat is triple screw and, upon reaching the scene of a fire, the two 8-cylinder wing motors are disconnected from the propellers and



New Apparatus Added to Tacoma's Fire Department Under the Current Modernization Program

hooked into two pumps, leaving the center motor for maneuvering.

One new fire station to house an engine and truck company was built in 1947 and plans and specifications are drawn up for four additional stations.

Finally, Tacoma's fire fighters are enjoying a 56-hour work-week, which became effective January 1, 1949.

N.B.F.U. Awards Radio and Press Prizes

Amid fitting ceremonies, three gold medals and nineteen honorable mention citations for outstanding public service in fire prevention during 1948 were awarded to press and radio, on May 12, 1949, in the offices of the National Board of Fire Underwriters, New York City.

The Gold Medals, or $500 in cash, were awarded to the *Staten Island Advance*, Staten Island, N. Y., a daily newspaper, for "its intensive public service campaign, which showed an all-around consciousness of fire prevention problems; the *Lapeer County Press* of Lapeer, Mich., a weekly newspaper, in recognition of its three-year campaign for fire apparatus for a Michigan County whose rural areas had previously been without fire protection; and Radio Station WOWO of Fort Wayne, Ind., for its outstanding continuous effort in fire prevention, as well as its comprehensive campaigns on Fire Prevention Week.

Honorable mention for daily newspapers went to the Santa Ana *Daily Register*, Santa Ana, Cal.; Burlington *Hawk-Eye Gazette*, Burlington, Ia.; Waltham *News Tribune*, Waltham, Mass.; *Philadelphia Inquirer*, Philadelphia, Pa.; Memphis *Commercial Appeal*, Memphis, Tenn.; and *Port Angeles Evening News*, Port Angeles, Wash.

Nine weekly newspapers were awarded honorable mention citations as follows: *The Township News*, South Bend, Ind.; *Sunday Sun*, Hammond, Ind.; *Blackduck American*, Blackduck, Minn.; *Starkville News*, Starkville, Miss.; *Sunday Sun*, Teaneck, N. J.; *Honeoye Falls Times*, Honeoye, N. Y.; *Delaware County Times*, Lansdowne, Pa.; and *Glenwood City Tribune*, Glenwood City, Wis.

Radio stations awarded honorable mention were WEBR, Buffalo, N. Y.; KNBC, San Francisco, Cal.; KELO, Sioux Falls, S. D.; KOGT, Orange, Texas, and WNEW, New York City.

Ohio Fire Brigades Association Organizers

First row, left to right: Robert Young, Vice-Chairman; Charles Nicklas, Treasurer; Ray Hart, Secretary. Second row, left to right: L. E. Shingledecker, Chairman; W. F. Ballard, Vice-Chairman.

Ohio Fire Brigades Association Being Formed

A movement is on foot to form the Ohio Fire Brigade's Association, Inc. Letters have been sent to top management of industrial concerns announcing the aims and objectives of the Association. The membership drive began June 1, 1949, with L. E. Shingledecker of Columbus, Ohio, Chairman.

The Association is being organized, according to the prospectus, to assist all membership personnel in setting up and placing on a permanent basis fire prevention and fire fighting activities in their respective establishments wherever in Ohio they may be. The group sets forth two projects for the coming year, beginning July 1, 1949. They are: (1) An all-day conference in the fall, at which there will be nationally known speakers on subjects relating to industrial fire prevention and fire fighting and (2) to conduct a three-day school devoted directly to industrial fire prevention and fire fighting to which membership may send as many representatives as desired.

The purposes of the proposed association are given in the prospectus as follows:

1) To co-ordinate the activities of all groups who have established fire brigade programs.

2) To promote the importance of employee training.

3) To work with all groups in advancing fire prevention and fire fighting in industries, mercantile establishments and communities.

4) To advance the efficiency of the profession of industrial fire prevention and employee training.

5) Help set up groups in districts, these groups in turn will make up the membership of this group.

6) To develop this organization into a national group and to establish a pattern for other states to follow.

7) To organize a school for men interested in brigade programs and employee training.

8) To conduct an annual meeting.

9) To develop a method by which we might aid groups who want to start this type program but do not know how to do same.

10) To establish a year-round program. In this manner keep fire prevention before the community all the time instead of one week a year.

12) To develop a pattern for the part to be played in civilian defense if needed to do so in the future.

Photo National Board of Fire Underwriters

Human Interest Campaign That Won Mention for Santa Ana Register

Fire Prevention Week, 1948, was effectively dramatized by the Santa Ana Register, Santa Ana, Cal., with a series of humorously pointed sketches, in which the leading character was depicted by Harry Brackett, veteran Santa Ana actor.

Fire Waste Council Announces Winners

The city of Memphis, Tennessee, was announced recently as grand winner in the annual Inter-Chamber Fire Waste Contest conducted by the National Fire Waste Council. The council was created by the Chamber of Commerce of the United States 27 years ago as an agency to coordinate the nation's fire prevention efforts. Its membership consists of 36

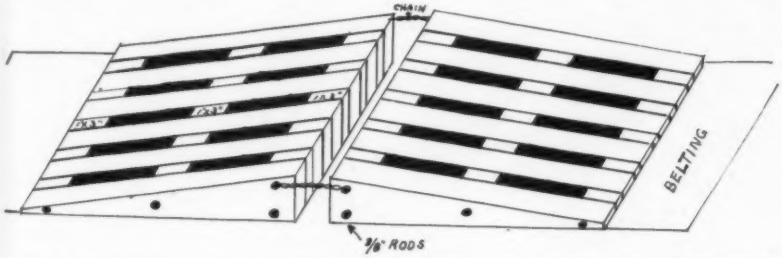
(*Continued on page* 450)

Short Cuts and Gadgets

NEW TYPE OF HOSE BRIDGE

This idea comes from Fire Chief John E. Weiland, New Lexington, Ohio, Volunteer Fire Department, no stranger to "Short Cuts and Gadgets."

Chief Weiland writes: Hose bridges made of solid wood, we have found from experience, very often split when a heavy truck has run over them, because of the unevenness or roughness of the street in which they are laid, requiring replacements of the blocks or extensive repairs.



To overcome this trouble we have made our bridges of 2-in. by 4-in. material with one inch separating blocks between, and all bolted together, as per drawing, with ½-in. rods. We drill the holes through the blocks ½-in. which gives enough flexibility in the bridges for adjustments to the contour of the street or roadway, allowing the trucks to pass over with no damage to bridge or hose. A piece of old belting nailed to the under side and allowed to extend out on either end, will prevent the bridges from slipping on icy streets as the tires will engage the belt first, holding same secure to the ground.

We have painted the bridges red, with the exception of the separating blocks which are white, which makes it easy to see them in the dark."

* * *

HINTS ON SHARPENING AXES

From time to time this journal has received requests for the best method of sharpening fire department axes. It's only natural that fire fighters should be a bit fussy about this operation. The fire department axe is unquestionably the most universally used "tool" in the fire service and it is only fitting that it should be kept "fit" for duty at all times.

Not having any axe to grind, literally and figuratively, the editor of this page checked with different authorities to determine if possible, the most practical and efficient method.

Here is the procedure recommended by the Norton Company, of Worcester, Mass., makers of abrasives and grinding wheels who, if anybody, ought to know.

"Sharpen the axe on a slowly rotating sandstone or suitable abrasive wheel. Be sure to keep the wheel very wet. Remember that the temper of the cutting edge can easily be drawn or softened in regrinding.

"Start to grind from 2 in. to 3 in. back from the cutting edge and grind to about ½-in. from the edge. Work for a fan shaped effect, leaving the corners reinforced for strength. Then grind a rounded, convex bevel down to the edge. Never grind the bit concave; this leaves the edge with insufficient support and it will break easily. Each time the axe is used, hone or touch up the edge with a handstone."

The company offers these "don'ts"—

Never grind an axe on a high-speed or dry wheel. The heat generated is very likely to draw the temper and soften the edge. The company recommends not using an axe head for pounding because it may split or break at the eye. It also is opposed to using an axe as a wedge because the result may be the same as if it were used for pounding. Furthermore, it recommends not striking sideways with an axe (hitting solids with the flat, we presume). Axes, it says, are not made to resist shock lengthwise of the head and cannot withstand severe sideways blows.

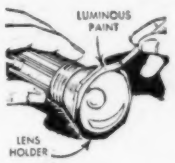
This last counsel sort of upsets the established practice of many firemen who use the flat-head axe as a striking instrument. In our Fire Chief's Handbook, also, we indicate such use—as well as employing the sharp edge of an axe as a wedge in getting out hinge pins, for instance.

Well, right or wrong, fire axes must "take it." Reasonable care in their use—and maintenance however, will lengthen their life—and perhaps that of the user, in a pinch!

* * *

LUMINOUS PAINT APPLIED TO FLASHLIGHT

Much time can be saved and trouble avoided when trying to find a flashlight in the dark, if luminous paint has been applied to the rim of the flashlight-lens holder. Most paint of this type will retain its luminosity for a considerable length of time. A small artist's brush may be used to apply the paint to the rim. "Popular Mechanics."



* * *

NIGHT SPOTTING OF HYDRANTS MADE EASY!

This one comes from W. P. Roble, Chief of the Salem, Oregon, Fire Department, aided and abetted by Chuck Taylor, Chief Deputy Oregon State Fire Marshal and it marks something like another epoch in the annals of the fire service, if we know our fire service history.

Salem claims—and we believe rightfully—it is the first city to have fire hydrants that will glow in the glare of headlights. It all comes about through the cooperation of the Lion's Club of Salem, as one of that organization's civic and safety projects.

The "glow" is furnished by the use of "Scotch-Light" tape, which reflects light to a high degree.

As a matter of fact, the idea is somewhat akin to the similar marking of fire alarm boxes, as described in the March issue of FIRE ENGINEERING.

The use of the Scotch-light tape not only helps firemen find the hydrants, but is a help in reducing the number of car-and-hydrant collisions.

The pictures show (1) Fire Chief William Roble and Lion's Club president, L. J. Stewart, and Stanley Smith who is in charge of the project, doctoring up one of Salem's fire hydrants; (2) how the hydrant looms at night with the reflecting tape.

The ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

SAFEGUARDING CHURCH CONGREGATIONS

THE discussion in this Round Table is a continuation of that which appeared in the May issue of FIRE ENGINEERING on safeguarding church schools and congregations.

The generous response from our readers makes it necessary to carry the discussion over to this issue and next month's as well.

Readers are invited to send in their comments on this subject. Address replies to Round Table Editor, FIRE ENGINEERING, 24 West 40th Street, New York 18, N. Y.

HERE IS THE TOPIC

1. **What is the practice of your department in controlling the life hazards incidental to church schools, Sunday schools and the congregating of other large groups of children in church structures for various activities?**
2. **Do you find safeguards to life in such establishments equal to those in public schools?**
3. **Are inflammable decorations, electric appliances (motion picture machines, spotlights, etc.) and other equipment which may constitute a life hazard permitted?**
4. **Do your fire department inspectors cover these establishments in their regular tour?**
5. **Have you found that church organizations are, in general, willing to cooperate with the Fire Department in correcting hazardous conditions?**

Discussion of Question

Walter B. Salyers, Chief, Covington, Ky.: Whenever we have large gatherings of children in church and school structures, we have at least two firemen attend these gatherings.

We do not find safeguards to life in church establishments equal to those in public schools.

We do not permit flammable decorations, motion picture machines or spotlights and other equipment which may constitute a life hazard, in these establishments.

During Fire Prevention week each year we visit every school in the city and give a 20 to 25 minute talk on fire prevention, and at least two fire prevention films are shown to the children.

Right at the present moment we are sending every church in the city the booklet published by the National Fire Protection Association entitled "Churches Are Burning," and then following up with a general inspection of them.

Zephrin F. Drouin, Chief Engineer, Lewiston, Maine: All churches are inspected by the building inspector and myself. Routine inspections are made twice a year. Checks are made for the means of egress, heating plants, wiring, for the unnecessary accumulations of rubbish, etc. Dance halls are more frequently inspected for the fire escapes and decorations.

I find the safeguards to life in such establishments are equal to public schools. In fact, we have had but few fires in schools and churches, and where a fire did break out, it was from the exposures rather than originating in them.

Decorations must be flameproof in accordance with state statutes and city ordinances. The electrical appliances must meet with the electrical code.

Our fire department inspectors make routine inspections in these premises three or four times a year, and quite frequently more often, especially when we receive a complaint. We are educating the public to become more fire conscious insofar as their surroundings are concerned. From them we receive confidential complaints which are attended to immediately.

I find that most organizations are more than willing to cooperate in matters of public safety. Our police, Board of Public Safety and Chamber of Commerce are doing a superlative job in such matters.

A. J. Fogaley, Fire Marshal, Corpus Christi, Tex.: The practice of this department in controlling the life hazards in parochial and private schools consists of inspections by building, electrical and plumbing inspectors, subsequent to an application for a certificate of occupancy. This is followed by health and fire prevention inspections.

The Fire marshal then maintains periodical inspections of all such establishments to insure continued safety. If they do not measure up to the standards set by our ordinance, the State Child Welfare Department revokes their certificate. My Assistant and I attend all special functions at which a large number of children and their parents assemble. We see to it that no hazards are created from smoking and other carelessness, and keep alert for prompt evacuation of attendants, should it become necessary.

We find safeguards in these establishments equal to those in public schools. Wholesome cooperation is thoroughly developed and maintained.

Flammable decorations and appliances which may constitute life hazards are not permitted. However, motion picture films, when shown, are under the supervision of a qualified operator. These showings are occasional and not the rule.

My Assistant and I make regular and routine inspections of all such schools.

Our department enjoys a responsive and cooperative spirit from church schools and day nurseries in the correction of all hazardous conditions, or in improving the premises to prevent fire and loss of life.

Edward Gall, Chief, Mount Vernon, N. Y.: The church schools, as in the case of the public schools in this city, are equipped with an interior fire alarm system with master box hooked up to our Central Fire Alarm office. Auxiliary fire extinguishing equipment is installed in these establishments and fire drills are conducted regularly.

As mentioned above the same policies are in effect, but the construction of the buildings are not as modern as those of the public schools.

Decorations are required to be flameproofed. The use of 16 MM safety film is permitted. If nonsafety film is used, a portable booth which meets with the requirements of Section 213 of the New York State Building Code for Places of Public Assembly is required, with a licensed operator in charge.

The buildings are inspected regularly by department inspectors.

We have found that church organizations are willing to cooperate with the fire department. However, there are cases where requirements are difficult to meet or correct. It is my opinion that this is due to the fact that the budget requirements are supplied by the members of the church whereas the city and state supply the public schools with the necessary funds to meet their budget requirements.

Leo J. Urbanski, Chief, St. Joseph, Missouri: When a special event or activity is held at a church, a fireman is detailed for duty there.

In public schools fire drills are held. This is not done in Sunday schools or churches.

We have a city law governing the use and handling of all motion picture machines and decorations, which applies to all buildings.

We find that these church organizations cooperate when a bad condition is found and brought to their attention.

F. C. MacGillivray, Chief, Halifax, N. S.: This phase of fire prevention work is carried out by our Fire Prevention Bureau. The size of the hall or area where these activities take place is obtained and then a quota given as to the number of persons allowed. Exit facilities must also be sufficent to afford easy egress. First

(*Continued on page* 447)

Manufacturers' Announcements

New Rural Firefighter

For firefighters in suburban communities and farm districts, faced with the problem of limited or no water supply, the new Smithco Firefighter was recently put on the market by L. B. Smith, Inc., Camp Hill and Philadelphia, Pa., and Syracuse, N. Y.

The Smithco Firefighter, designed especially for suburban and rural communities with limited water supply, carries a reservoir of 2,000 gallons with it to the fire—enough to extinguish a fire of considerable size without the help of any additional source or supply.

The New Smithco Firefighter

Its 2,000 gallon capacity of course is the number one feature of the Smithco, but it also has incorporated many other features which aid in quick and efficient fire defense. The F7 or F8 Ford, WC-20T White Tractor or their equal are recommended by the manufacturer.

New Mobile Radio by RCA

A new two-way mobile radio equipment which promises to double the available communication lanes and open new facilities to police and fire departments is now in production, it was recently announced by the RCA Engineering Products, Camden, N. J. The equipment is designed to operate in the 152-174 megacycle band.

Taking advantage of special highly selective circuits, the new RCA equipment makes it possible to operate in channels between stations now on the air without "spillover" into the adjacent channels.

Known as the RCA Carfone, the new radio transmitter-receiver is completely contained in a single metal-shielded unit only slightly larger than a shoebox. Small enough to fit in a corner of the trunk or in the driver's cab, its novel construction makes it possible to mount the equipment practically any position, on either a horizontal or a vertical surface. The controls and loudspeaker are combined in a single compact unit for attachment under the dashboard.

A newly developed circuit for automatic modulation control locks the voice input level at a constant amplitude. Regardless of whether the vehicle operator shouts into the hand microphone or speaks softly into it at some distance, the dispatcher at the receiving point hears the messages at a steady level.

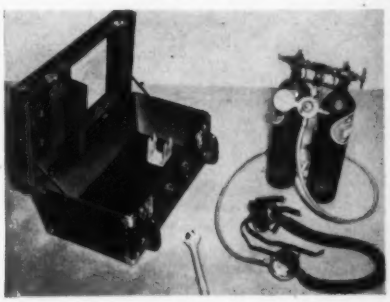
General Detroit Acquires Hose Company

The General Detroit Corp. and its affiliate, The General Pacific Corp., have announced the purchase of the Fire Hose Manufacturing Co. of Paterson, N. J., manufacturers of unlined linen Underwriters yellow labeled fire hose. In making public the change of ownership, R. L. Bradon, President and Treasurer of the corporation, stated, "The addition of this new plant is made necesssary by the increased demand for fire fighting equipment. The new plant under General auspices will concentrate on the production of unlined linen fire hose and will supplement General's other efforts in the fire hose field as exclusive sales agents for The Boston Woven Hose and Rubber Co."

Newly appointed manager of the Paterson plant is C. W. Abele, formerly New York Divisional Sales Manager of The General Detroit Corp. Abele will continue to function as the corporation's export manager, in addition to other duties. The new plant will increase to 7 the number of factories owned by The General Detroit Corp., in various parts of the United States and Canada.

New Scott Inhalator

A new model of the Scott oxygen demand inhalator has been announced by Scott Aviation Corporation, Lancaster, N. Y.



New Scott Type B Oxygen Demand Inhalator

The Type "B" unit, illustrated herewith, provides a completely self-contained "package" for more effective and greatly simplified administration of oxygen. Using Two "D" Cylinders (95 gal. capacity), it is furnished with oronasal mask, 6 foot extension hose, wrench, valve key, and instructions, completely ready for use.

Securely retained in a carrying case, it is instantly removable by lifting the bail-type handle from its nest. It is easily attached to larger cylinders for service of longer duration.

All Scott Oxygen Inhalators are now

Hose Sent to Fire by Plane

Fast teamwork on the part of two firms, the B. F. Goodrich Company and the Wooster Brass Company, and two airlines made possible the delivery of 10,000 feet of fire hose to the scene of a Minnesota forest fire approximately 24 hours after the emergency call for the hose had been received. The urgent hose request was telephoned to B. F. Goodrich late one afternoon and the first shipment was made at noon next day. Minnesota state trucks sped the hose from the St. Paul airport to the scene of the fire. Pictures show the hose being loaded at Akron-Canton airport.

equipped with a control providing, in addition to the time-proven Demand Flow, a constant flow at low pressure, "at the touch of a button."

FWD to Advance Stockland

H. O. Stockland, Jr., advertising and sales promotion manager for The Four Wheel Drive Auto Company, Clintonville, Wis., will become director of sales of the company on July 1, 1949, according to an announcement May 1 by

R. L. Koehler, Who Has Resigned as Director of Sales of the Four Wheel Drive Auto Company, Clintonville, Wis., Congratulates M. O. Stockland, Jr., on His Appointment to the Helm of the FWD Sales Organization. Stockland Was Formerly FWD's Advertising and Sales Promotion Manager and Koehler's Assistant

Robert A. Olen, general manager of the company. Robert L. Koehler, present director of sales, has resigned after twelve years of sales administration work with the company to join in a partnership with Oscar E. Betow and John E. Battes in the FWD Pacific Company, which distributes FWD trucks throughout the state of California. Battes leaves his post as FWD's western zone sales manager to joint the partnership. The three partners have purchased FWD's Los Angeles branch.

Fire Fighter for Small Towns

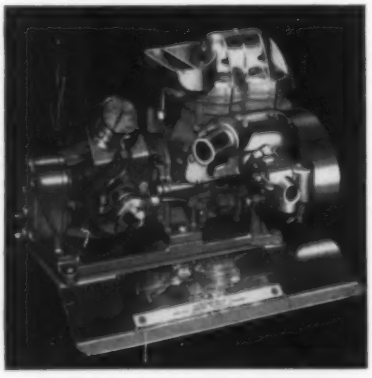
Several years ago John E. Holden was made Chief of the Fire Department for his small home town, Newington, N. H. He took his responsibility seriously, and began to devise fire equipment which would meet the local needs. He wanted a unit that would take the water to the fire and operate as a completely integrated self-service fire fighter. He picked up a discarded petroleum truck tank and equipped it with pumps, hose reels, special nozzles, valves, ladder racks and other essentials. This original unit was used very successfully.

Mr. Holden is in the oil business and has been using Heil petroleum transport tanks for many years. It was only natural, therefore, that he turn to The Heil Co., Milwaukee, for a development and manufacturing source for his rural fire fighter. Now, with refinements and improvements, the Holden Fire Combat Unit is being manufactured by Heil.

The Heil-built fire combat unit is equipped to discharge fog, foam, and wet water with efficiency. It carries 800 gallons of water to the fire plus foam and wet water ingredients. Any standard 84" cab-to-axle truck chassis of two tons or larger capacity will take the new fire combat unit. Depending upon the supplementary equipment desired, the complete fighter runs about $7,000 to $8,000.

New Lightweight Portable Pumper

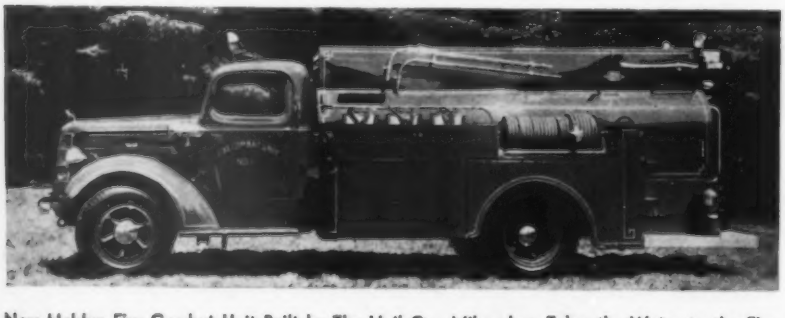
A new and smaller Model 5-A Pacific Portable Pumper is the latest addition to the line manufactured by the Fire Equipment Division of Pacific Marine Supply Company, Seattle.



Model 5A Pacific Portable Pumper

The newly introduced model weighs 38 pounds, complete with pump, motor, and base. Engine is of 2-cylinder, alternate firing type with magneto ignition, delivering 5 h.p. at 4,000 r.p.m. A choice of two pumps is offered, one for maximum volume up to 32 gallons per minute, the other for maximum pressure up to 275 pounds per square inch. In both cases pumps are of self-priming, positive displacement type, with ball bearing mounted Monel shafts.

For forest fire protection the new lightweight pumper fits in with modern fire suppression techniques involving the use of fog nozzles and wetting agents, especially where helicopter or air transportation are employed.



New Holden Fire Combat Unit Built by The Heil Co., Milwaukee, Takes the Water to the Fire, Is a Fully Equipped, Self-Sufficient Fighter. Selector Valves and Special Nozzles Permit Spraying "Fog," "Foam," and "Wet Water" as the Occasion Demands. It May Be Operated with a Two-Man Crew. Any Standard Two-Ton Truck Chassis with an 84" Cab-to-Axle Measurement Will Accommodate the Tank Fighter. The Unit Was Recently Introduced in the East and Many Small Towns Already Have Them in Service.

Sanderson Advanced by Mine Safety Appliances Company

Chester H. Sanderson has been appointed advertising manager of Mine Safety Applicances Company, Pitts-

Chester H. Sanderson

burgh, Pa. A native Pittsburgher, Mr. Sanderson has been employed for over twenty years in Mine Safety's direct mail, display, and advertising departments.

New Oxygen "Drinking Fountain"

An improved emergency inhalator, and also a portable outfit, have been announced by Bishinger-Koehler Manufacturing Company, Inc., Pittsburgh 21, Pa.

New Oxygen "Drinking Fountain"

The large standard B-K outfit is attachable by its coupling nut to any standard oxygen cylinder. The B-K Portable Inhalator is a self-contained complete outfit. Assembled with its oxygen tank in a convenient size carrying case, it is ready for instant application.

(*Continued on page* 463)

$17,500 Awarded for Cowboy Suit Fire Victim

In Buffalo, N. Y., a 10-year-old boy was awarded an out-of-court settlement of $17,500 as a result of a law suit brought by his parents, after his cowboy suit "exploded" on V-J Day.

Defendants in the suit included manufacturers, jobbers, distributors and retailers. Attorney for the victim, Ralph Manifried Krau of Depew, N. Y., contended that the outfit was made of rayon that "exploded in a blinding flash of flame" when the boy ventured near a bonfire.

The Supreme Court, in which the settlement was approved in March, was told the boy was hospitalized for six months and permanently disfigured.

* * *

Frozen Lake Spouts Mysterious Fire

A weird fire that spurted skyward from the center of ice-covered Canada Lake, near Gloversville, N. Y., caused excitement as hundreds of people from surrounding communities lined the shore to witness the phenomenon.

The fire burned briskly for about an hour, during which time traffic on the road bordering the lake was jammed as motorists paused to see the "miracle" of flame seemingly emanating from water.

The whole thing started when Ronald Morris and his uncle, John Morris, cut a fishing hole in the ice at a point where the water is about 25 feet deep. Almost immediately, they detected an odor of gas and noticed that the water was bubbling strangely.

Out of curiosity, John Morris tossed a lighted match into the hole and a column of brilliant red flame shot into the air.

Many theories were offered to account for the mystery, the most plausible being that tank bark refuse from the old Wheeler & Glaflin leather mill on Caroga Lake had seeped into the Canada, causing an accumulation of gas over a period of years. When Canada Lake froze over, the gas pressure was built up in the air space between the water and the ice so that when young Morris chopped his fishing hole and his uncle tossed in the match it had the same effect as turning on the burner of a gigantic gas stove.

* * *

Hot Off the Tape

Engine 5 of the Eastchester, N. Y., Fire Department was called out in April to extinguish an unexplained fire which started in a 75-foot tree on a golf course. . . . A prize herd of 29 Holstein cattle perished when fire swept Westwind Farm, near Delanson, N. Y.; loss $100,000. . . . Thomas A. O'Brien, 22, member of the Wilmington, N. Y., volunteer Fire Department, died April 16 in Lake Placid Hospital from injuries suffered when he fell from a piece of apparatus. Police reported a hand rail gave way. . . . In Detroit, Arthur Root, 65, employee at a large creamery was told he was too ill to work and he should go out and sit in the sun. Outside, Root spotted smoke coming from the plant. He grabbed a fire extinguisher, rushed up stairs to the roof, calling for help. The fire was extinguished with loss of $1,500. Then Root fell dead of a heart attack. . . . A bar and a television set in the Ashland, N. J., firehouse got Fire Chief Richard G. Swope so upset he resigned. Seems it distracted the firemen. "Liquor and fire fighting don't mix" said the Chief. "The fire company's morale has been ruined since the bar was installed twenty-eight months ago. Why I had to go to one fire all by myself, a while back." . . . Capt. Julius Kaufman, 45, of the San Diego Fire Department is eligible for retirement after completing 20 years of service. In all that time, Kaufman has never put out a fire. He's had but one assignment, that of chief of the Fire Alarm Office. He figures in his time he's dispatched equipment to about 15,000 alarms. IRVING JOHNSON . . . On March 3 last, police of Hartford, Conn., found the burned body of a man, identified next day as James Atkins, about 55, in an apartment at 320 Wethersfield Avenue.

Medical examiner Walter Weissenborn said the man had been dead about two weeks. Death was due to first degree burns and suffocation, he said. The body was found on a partly burned couch in the parlor of the fourth-floor apartment where Atkins lived alone for 20 years. His bed in an adjoining bedroom was almost completely destroyed by fire.

* * *

Valley Stream Firehouse Burns

The two-story frame firehouse of Valley Stream Hook & Ladder Company 1, Valley Stream, L. I., N. Y., caught fire from an unknown cause on a March night, and before the alarm aroused the volunteers in their homes, the blaze had a good start.

Prompt action however enabled the vamps to remove their truck and they, with the aid of fellow firemen from the area, brought the fire under control after a two hour battle, during which one fireman, Ralph B. Sauter, was overcome by smoke and hospitalized.

Damage was estimated at $4,000.

* * *

Sows Sabotage Fire with Porcine Appetite

The vols of Crescent Springs, Ky., under Fire Chief Joseph Kallmeyer were called to fight a fire in Walter Covert's chicken house and tool shed and a nearby barn was threatened. As a safety measure the firemen turned two pigs out "to pasture" and concentrated on controlling the fire.

Whether the porkers were bent on sabotaging the fire, or just were "hose hungry," the fact remains the vamps suddenly found that the half-grown porkers were starting to make their breakfast off the middle of a nice 50-foot section of charged line!

Firemen knocked off long enough to chase the pigs before they could puncture the line—then they had to designate a volunteer to "ride herd" on the pair to prevent further damage. The lads managed to save the barn and Covert home 100 feet away, but the shed, chicken house and 200 chickens were destroyed.

"Rural fire fighting has its moments" said Assistant Chief William Madden—and sometimes it's different, and difficult! The boys have got the porkers' teeth marks in the hose to prove it!

(Thanks, PAT HOLZ)

* * *

Why Firemen Go Mad!

In Denver, Colo., Jerry Mickle, aged 5, left alone while his mother and sister went shopping, spied his father's pipe and decided to experiment.

All would have been well if he'd made himself sick before he had time to start a fire, but no such luck. Jerry stoked up the pipe in approved fashion and tossed the match in a clothes closet, with the usual result.

Jerry, thoroughly frightened, poured water on the blaze but was getting nowhere until firemen, summoned by neighbors, arrived. They confined the fire to the Mickle bedroom.

Jerry's cat Tommy, failed to retreat quickly enough and was overcome by smoke. So the Brothers remained to apply artificial respiration to the tabby-cat Tommy, bringing him around after about five minutes work.

Last reports say Jerry has given up the pipe (and, matches, we hope).

IRVING W. JOHNSON

* * *

Hot Cross Bunny Blazes Hot Trail

Down near Frederick, Md., a hot hare gave the vamps of Independent No. 1 fire company a warm workout.

James Franklin Taylor called the fire fighters to his farm near Mount Carmel, 4 miles east of Frederick, on Route 40. It develops that while he was burning a brush pile, a rabbit scurred out, its fur afire. In frenzied flight, the flaming bunny ran through Taylor's orchard setting fire to the tall dry grass as he sped. Even in seven-league boots Taylor couldn't keep up with the burning bunny to extinguish the fires as they started, so he called the vols. They worked nearly an hour knocking out the blaze, which burned over an acre and a half.

No one but the rabbit was hurt, sez Taylor. IRVING JOHNSON

* * *

Another Television Hazard?

You've heard of the fire caused by the sun's rays being magnified by the gold fish globe? Well, after receiving this account from Fire Chief Frank T. Miller, Linden, N. J., who vouches for its authenticity, we're inclined to wonder if the television set isn't going to go the gold fish globe one better as a fire starter.

On Sunday, April 10, 1949, according to Chief Miller, an enlargement lens placed in front of a television set on display in a store window at 1197 E. St. George Ave., Linden, was responsible for a fire.

The fire in the window was first noticed by some children who were passing by. They rushed in and notified the proprietor of the shop who got busy with a 2½-gal. S. & A. extinguisher and doused the flames.

Investigation shows that the fire was caused by the concentration of the sun's rays magnified by the enlargement lens set in front of the television set in the window.

Damage—one television set destroyed —one show window damaged by smoke and water.

FALSE ALARMS

"Fourth and Main. It's the Acme Pet Shop!"

Short Changed

"Mr. Jones, I just heard your little boy is seriously ill from swallowing a half dollar. How is he today?"

"No change yet."

"What's your cat's name, little boy?"

"Ben Hur."

"Odd name for a cat."

"Well, we just called him Ben until he had kittens."

Half the world doesn't know how. The other half lives.

We're told that if your wife is away on a holiday and you want to get her home in a hurry, just send her a copy of the local paper with one item clipped out.

Mamma passed her driver's test,
Mamma's feeling regal;
She can dent a fender now,
And everything is legal.

Naked Truth

Mother: "If I'd had a bathing suit like that when I was a girl, you'd be six years older."

First Cow: "What do you think of the new farm hand?"

Second Cow: "I think he's an awful jerk."

Visitor: "I heard those nurses in the hall saying mean things about you."

Patient: "Yeah, they've had me on the pan ever since I got here."

Your conscience is that part of you that feels terrible when everything else feels swell.

To Stimulate Discourse

One of our readers has sent us a clipping which, so he claims, contains information of great value to men. If you are bored by your feminine dinner companions, ask these three questions:

1. Ask the lady on your right if she's married. Should she say "Yes," ask her if she has any children. If she says "No," ask her how she does it.
2. Ask the lady on your left if she's married. If she says "No," ask her if she has any children.
3. Ask the lady across from you if she has any children. If she says "Yes" ask her if she's married.

Aggressive wife, to meek little husband, whom she had just raked over the coals for making a fool of himself at a party: "And don't be sitting there making fists at me in your pockets, either!"

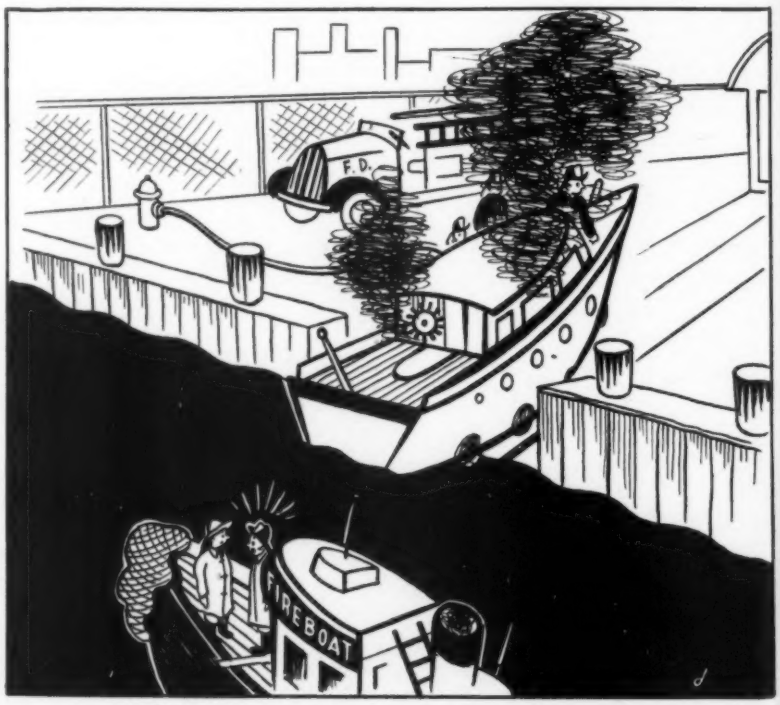
A braggart is one who can't open his mouth without putting his feats into it.

Opportunist

Librarian: "It's time for closing, sir. Is there anything you'd like to take out?"

Student: "Yes, there is. How about the blonde in the blue dress?"—*Rocky Mountain M. J.*

Many a rural romance has started on a gallon of corn and ended with a full crib.



"If It Spreads to the Stern, We'll Take Over!"

JOE: Not the way things are now, Tom. The city ordinance won't let us.

TOM: How come?

JOE: Under the law, the city's hose specifications can't include any improvement that's confined to one manufacturer.

TOM: You mean—if somebody develops a type of fire hose better than the rest, this city can't buy it?

JOE: That's it exactly. They figure it would be unfair because other manufacturers, with ordinary hose, couldn't compete in the bidding.

TOM: So the city ends up buying the cheapest fire hose on the market.

JOE: Right—the cheapest hose that meets those minimum specifications. It's not cheap in the long run, though, because at a price just a little higher, the city could buy *good* hose that would last twice as long. We'd be saving money.

TOM: Yes, and saving lives, too. Remember what happened to Pete Cleary? He'd be right here talking with us now if that hose hadn't blown out when it did. It's too late to save Pete, but . . .

SAVE LIVES AND SAVE MONEY IN YOUR FIRE DEPARTMENT.

Get ALL the FACTS on fire hose. Mail this coupon TODAY!

TRADE **Bi-Lateral** MARK

Bi-Lateral Fire Hose Company A
20 N. Wacker Drive, Chicago 6, Ill.

Without charge or obligation, please send me fire hose facts that will help my city save lives and money.

NAME_____

DEPARTMENT_____

STREET ADDRESS_____

CITY_____ ZONE_____ STATE_____

WATEROUS presents...

"FAMOUS FIGHTING HEARTS"

SWIMS FOR 6 DAYS:

There are many full bodied people who are unable to swim a stroke. Yet here is a man *without legs* who swam 155 *miles*, and did it without leaving the water. Charles Zinny, the man who wouldn't give up, even ate and slept in the water. August, 1938—Albany to New York.

WATEROUS fire pumps perform amazing feats of endurance too. There are cases on record where WATEROUS pumps were operated for weeks. After such runs, a routine check up and they were ready for more. This sort of stamina is the product of trained engineers and craftsmen plus 63 years of priceless experience.

If you want a fire pump that can "take it"—specify WATEROUS on your next piece of fire apparatus. When it's a WATEROUS, you can depend on it.

SINCE Waterous (Dependable) 1886

WATEROUS

FIRE PUMPS

WATEROUS COMPANY • ST. PAUL, MINN.

What's Burning

THE following list includes fires of $10,000 loss and over in the United States and Canada for the month of May, 1949.

Month Ending May 31, 1949

Little Rock, Ark.—W. E. McMinn Construction Co. plt. destroyed.

Tucson, Ariz.—Tucson dog racing park destroyed.

Elgin, Ill.—Horse barn at Meadowdale farm, eight miles northwest, destroyed.

Elfland, N. C.—Elfland Roller Mills Co. damaged.

Pittsburgh, Pa.—Lumber storage bldg. at Southside plt. of Jones & Laughlin Steel Corp., destroyed.

Stephan, S. D.—Girls' dormitory at Stephan Indian Mission destroyed.

South Paris, Me.—Cattle grandstand and ten stock sheds at South Paris Fairgrounds destroyed.

Corning, N. Y.—Whse. leased by Corning Glass Works for storage of unfinished glassware and packing material.

Yakima, Wash.—Price Furniture Co. bldg., stock fixtures, destroyed. Explosion.

Kewanee, Ill.—Fire destroyed production facilities of the Martin Machine Co. trailer plt.

Cambridge, Mass.—Store bldg. occupied by Paul's Tire Shop, Hartnett's Liquor store, Genoa Grocery, Bell-in-Hand Cafe, Italian American Club and Harvey Fish Market, damaged.

Irvington, N. J.—Keller, Inc., roofing supplies, destroyed.

Shinnston, W. Va.—Mine tipple, bldg. housing shakers, screens and conveyor belts, of Bethlehem-Fairmont Coal Co., destroyed. Torch used to cut through bolt.

Blakely, Ga.—Boyett Wholesale Co. bldg. destroyed.

Dr. Phillips, Fla.—Main packing plt. of Dr. Phillips Co. destroyed.

Marshall, Tex.—Stewart Grocery Co. and Whittle Variety Store, Avinger, Cass County, destroyed.

Radford, Va.—Great Valley Anthracite Coal Corp. tipple, McCoy, eight miles away, destroyed.

Medford, Wis.—Plt. and office of Hurd Millwork Corp. destroyed. Overheated electric motor.

Mount Holly, N. J.—Two dairy barns on farms of Harold Pew destroyed.

Montmagny, Que.—Wood veneer plt. owned by Fils Placage Limitee, destroyed. Defective electric motor.

Statesboro, Ga.—Portal High School bldg., 15 miles away, destroyed. Elementary school and gymnasium damaged.

Madison, Wis.—The Nelson-Peiss Mfg. Co. destroyed.

Lake Geneva, Wis.—Three business establishments, three bldgs., and two trucks destroyed; a lumber company damaged.

Quebec, P. Q.—Coffin-mfg. plt. and equip. destroyed.

Keokuk, Ia.—Whse. of Keokuk Barrel Co. damaged. Open lantern.

Verdun, Que.—Felson Furniture, Inc., factory destroyed.

Inglewood, Cal.—Clubhouse, grandstand and turf club at Hollywood Park race track destroyed.

Chicago, Ill.—Two bldgs. of Ace Core Co.; Lake States Steel Corp. and Giba Lumber Co. damaged.

Dover, Ohio—Ester Dept. of Hardesty Chemical Co. damaged. Explosion.

Crestline, Ohio—Schill Furnace Mfg. Co. damaged.

Yakima, Wash.—City Peerless Cleaners destroyed. Explosion.

Moro, Ore.—Morrow grain grower elevator; 180,000 bushels grain destroyed.

Bonneville, Ore.—Stores, taverns, residences, contents destroyed.

Quebec, P. Q.—The Roman Catholic Church of St. Vincent de Paul and adj. school for poor children, destroyed.

Holtville, Ala.—Community project wood shop, machine shops, auto mechanic shops, quick freeze plt., canning plt. and grist mill of Holtsville High School damaged.

Sacramento, Cal.—Rio Linda Independent Order of Odd Fellows Hall, in Horrells Grocery & Frozen Food Lockers bldg., destroyed.

Bethany Beach, Dela.—Warren restaurant bldg. and Hilda's Furnished Apts. destroyed. Two dwellings damaged.

Springfield, Ill.—St. Joseph School, Springfield Roman Catholic Diocese, destroyed.

Grand Rapids, Mich.—Nichols & Cox Lumber Co. prefabricated housing plt. destroyed.

Pittsburgh, Pa.—Sabin Mfg. Co., Versailles Township, kitchenware mfrs., damaged.

Radford, Va.—Whse. of Gordon Dalton Grocery Co. destroyed. Burning box car alongside bldg.

Pasco, Wash.—Lewis Hotel and two stores destroyed.

Saratoga Sprngs, N. Y.—Fire and smoke damaged Algonquin bldg. Blaze of undetermined origin started in basement of the Standard Furniture Co. Three other business establishments are also housed on the first floor.
Maniwaki, Que.—Power plt. damaged. Friction of leather belt over wooden fly wheel.
Chicago, Ill.—Bottle storage plt. of Natl. Bottling Corp. and bldg. occupied by Abrasive Process Co. damaged.
Highland Park, Ill.—Pavillion and bandshell at Ravinia Park destroyed.
Osseo, Minn.—Midland Plywood Corp. damaged.
Jackson, Miss.—Hart bldg. damaged.
Fort Worth, Tex.—The Fort Worth Texas League Baseball Park, belonging to Brooklyn baseball chain, destroyed. Arson suspected.
Puyallup, Wash.—Puyallup City Hall destroyed. Faulty wiring.
Portland, Ore.—Lewis Hotel, Sears Roebuck offices destroyed.
Racine, Wis.—Storage whse. of W. C. Pugh Coal Co. destroyed.
Twin Falls, Ida.—Bacon Produce bldg. damaged.
Vancouver, B. C.—British Columbia Forest Service Marine Station destroyed.
Fort Wayne, Ind.—Fort Wayne Builders Supply Co. damaged.
Fort Wayne, Ind.—Kruse Whse. damaged. Trash fire.
Estill, Ky.—General Service Co. store destroyed. Adj. dwelling of Walter Owens, also destroyed.
Skowhegan, Me.—Thompson Mfg. Co. damaged. Spray booth explosion.
Buffalo, N. Y.—Lumber yard of The Zimmerman Lumber Co., Inc. damaged.
Tulsa, Okla.—Storage room of Graybar Electric Co. damaged.
Sand Point, Ida.—Bank variety store, Masons Hall, Sand Point Realty, contents destroyed.
Fairbanks, Alaska—Alaska Airlines hangar destroyed. Spark welder torch.
Seattle, Wash.—Cannery tender new check destroyed. Explosion.
Curling East, Newfoundland—Herring plt., waterfront, destroyed.
Springfield, Ill.—Young Women's Christian Association bldg. damaged.
Venice, Ill.—Eastern Trestle approach of Illinois Terminal Railroad to McKinley Bridge across Mississippi River, between here and St. Louis, Mo., damaged.
Kingsport, Tenn.—Bldg. occupied by Jankey Utilities Service, Inc. and Watson Electric Co. damaged.
Harrisonburg, Va.—Grain mill of Mutual Field Co. destroyed. Lightning.
Hamilton, Tex.—Texas Theatre, West Tailor Shop and City Cafe damaged. Explosion.
Pikeville, Ky.—Store, office bldg. and clubhouse of Alma Coal Co., near McCarr, destroyed. Kerosene.
Everett, Wash.—Bay Side Iron Works damaged.
Albert Bay, B. C.—Bay Hotel and three dwellings destroyed.
Mallard, Ia.—Render Hardware and Implement Co., Post Office, Shutz Market and Locker plt. and vacant city hall bldg., destroyed.
Salisbury, Md.—Clothing factory of Louis and Oscar Bogash, destroyed.
Coshocton, Ohio—Tipple of Freeport Gas & Coal Co., two miles west of Fresno.
Youngstown, Ohio—Yoho & Hooker Lumber Co. yard destroyed.
Lake City, S. C.—Whse. of Singletary & Son, Inc. damaged.
Kenosha, Wis.—Factory of Bardon Rubber Products Co., Highway 43, Sommers township, six miles west, destroyed.
Clarence, Ont.—Baptist Church, genl. store, stable, whse. and ice house of Arthur E. Wilson, destroyed.
Tampa, Fla.—Country estate home of M. J. Carleto, Keystone Lake, destroyed.
Willoughby, Ohio—Plant of Barium & Chemicals, Inc., damaged.
Knoxville, Tenn.—Dormitory at hospital farm of Eastern State Hospital, two miles north, destroyed.
Peshtigo, Wis.—Shop of Thompson Boat Co. destroyed.
Hayward, Cal.—J. C. Penney Co. store damaged.
Hurlock, Md.—Rosalie Mfg. Co., women's and children's clothes mfrs., destroyed.
Whitfield, N. H.—King Block, business-apt. bldg., destroyed.
Wadesboro, N. C.—Allen Milling Co. plt., flour and grain product mfrs., damaged.
Lockport, N. Y.—The Aluminum & Brass Co. foundry destroyed; St. Patrick's parochial school damaged; a farm supply firm damaged.
McAlester, Okla.—T. H. Rogers Lumber Co. damaged.
Compton, Cal.—Hangar at Compton Airport destroyed.
San Francisco, Cal.—King Food Center, super market, destroyed.
Arkadelphia, Ark.—Main bldg. at Ouachita College, destroyed.
Elwood, Ind.—Factory bldg. occupied by Konigslaw Stamping & Tool Co., Hubbard Spool Co. and General Lamp Co. damaged.
Mt. Pleasant, Ia.—Shop bldg. of J. B. Harrigan Construction Co. destroyed.
Oxford, N. Y.—Church Lumber Co. plt. destroyed. Cigarette.
Toledo, Ohio—Karp Dept. store, grocery store and dry cleaning shop damaged.

Of Course He Can Put the Fire Out!
HE HAS AN
INDIAN FIRE PUMP

There's no doubt about the result when this "one man fire department" goes into action. "They are worth their weight in gold". These are some of the praises firemen write us about INDIAN FIRE PUMPS. They are the leading hand extinguishers for fighting Class A fires according to fire departments and foresters. Ask one of these men who have used them. "Water wetting" agents work best in INDIANS and do not harm the tank.

Now is a good time to be sure you are amply supplied with INDIAN FIRE PUMPS. Available with Armco zinc grip steel tanks lined with asphaltic base paint or with solid brass or chrome plated tanks. Send for catalog describing these famous back pack extinguishers.

Put the INDIAN Sign on Every Fire!

D. B. SMITH & CO. 406 Main St. Utica 2, N. Y.

PACIFIC COAST BRANCHES:

Hercules Equipment & Rubber Co., Inc.
435 Brannan Street
San Francisco 7, California

Roy G. Davis Company
617 East Third Street
Los Angeles, California

Fred E. Barnett Company
2005 S. E. 8th Ave.
Portland, Oregon

Fred E. Barnett Company
600 Spring Street
Klamath Falls, Oregon

Mill & Mine Supply, Inc.
2700 Fourth Avenue South
Seattle, Washington

L. N. Curtis & Sons
426 West Third Street South
Salt Lake City, Utah

CANADIAN AGENTS:

Fleck Bros. Limited
110 Alexander Street
Vancouver, B. C., Canada

Duke Equipment Company, Limited
297 Duke Street
Montreal 3, Canada

Barnsdall, Okla.—High school destroyed.
Abilene, Tex.—Patton Oil Refinery, Rotan, damaged. Short circuit.
Wichita Falls, Tex.—Dwelling of Col. W. T. Knight destroyed.
Seattle, Wash.—Bell Tower, Univ. of Washington, destroyed.
North Castle, N. Y.—Midget automobiles and J. F. Sullivan's garage, destroyed.
Victoria Harbor, Ont.—Brick veneer bldg. owned by Bruce Cooke and containing two stores and confectionary shop, destroyed.
Valdosta, Ga.—J. Fyce Martin tobacco whse. destroyed.
South Attleboro, Mass.—Roscoe W. Phillips Lumber Co. damaged.
Westboro, Mass.—Amusement Park, Lake Chauncey, destroyed. Defective chimney.
St. Louis, Mo.—Plt. of American Bituminous Co., insecticide and weed-killer mfrs., damaged. Tank of alcohol benzene and sulphuric acid boiled over.
New Bern, N. C.—Dwelling of Arthur B. Bradsher, Neuse River, about 12 miles below New Bern, destroyed.
Toledo, Ohio—Plt. No. 1 of Unitcast Corp. damaged.
Portland, Ore.—Alibrite Fluroscent Fixture of Calif. destroyed. Arson.
Refugio, Tex.—Topping plt. of Bennett Oil & Refining Co. destroyed.

World Wide Fire News

By Roi B. Woolley

Accident Bill $3 Billion in 1948

Industrial accidents cost American employers more than $3 billion in 1948, according to Ewan Clague, Commissioner of Labor Statistics. The total cost was probably double that figure if expenses to injured workers themselves and to the public were included. Injuries included burns from fires.

Mr. Clague told the President's Safety Conference that 16,500 workers were killed in industrial accidents in 1948, 1,800 permanently injured and 1,858,000 others injured enough to cause them to lose one or more days' work.

* * *

Mysterious Ship Fire Costly

The 7,000-ton steamship Antigua, flagship of the United Fruit Company's Great White Fleet, was ordered beached March 30 as a mysterious fire blazed in her hold.

Four tugboats worked the 432-foot vessel away from the Julian Street wharf, New Orleans, where it had been docked. The cause of the fire was not immediately reported but it was feared the cargo of beer, flour and cement with which the ship was preparing to sail for Panama was ruined.

* * *

Gas Geysers Rout Italians

Hundreds of villagers of Basiasco, a North Italian hamlet, with a population of 1,000 were evacuated April 7 when the little community suddenly found itself amidst huge geysers of methane gas and mud. The biggest reportedly fountained 5,000 feet in the air.

Authorities said the evacuation was ordered because of the danger of fire and explosions from the flammable, colorless gas, which normally is formed by rotting vegetable matter. According to one dispatch, there was some panic among the frightened villagers.

The gas is reported ripping through cracks in the earth with terrific pressure. Presence of petroleum has not been reported.

* * *

Protection Sought from Atomic Rays

The first steps have been taken by the Fire Extinguisher Manufacturers Association, Inc., to study the equipment, methods and materials requirements of civilian protection against possible atomic radiation in any future war, it was disclosed following the two-day session of the Association at the Statler Hotel, New York City, recently.

According to J. O. Binford, past president and G. H. Boucher, president, atomic radiation protection has been placed on the FEMA agenda for 1949 research.

At the close of its convention, the Association decided to send a special letter of commendation to the City of Dayton for exemplary action in organizing city-wide industrial fire brigades, whereby fire losses were held down to about 50 per cent of the national average in 1948.

* * *

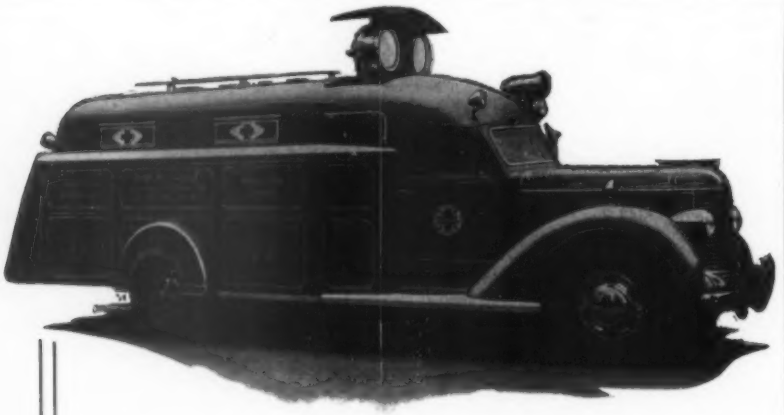
Flash Bulb Peril Denied

The Civil Aeronautics Board said in May that fears concerning explosion of photographic flash bulbs carried in aircraft were groundless.

The announcement resulted from an investigation into this possibility following an airline crash in October, 1947, at which time there was speculation that flash bulbs could be exploded by radar energy from within the plane or from the ground by other means.

Investigations by the Board's safety bureau, other Government agencies and private industry revealed:

1) It has been impossible to fire a



Do You Need an

EMERGENCY FLOODLIGHT TRUCK?

DeLuxe CUSTOM BUILT EQUIPMENT with or without the FLOODLIGHTING FEATURE, All Steel Enclosed

TWO - MODELS

THE SENIOR (3 ton Chassis, 175" Wheel Base)

THE STANDARD (2 ton Chassis, 158" Wheel Base)

Both Models carry complete First Aid and Salvage Equipment as required by the customer.

The SENIOR MODEL—most suitable for cities, is equipped with exterior and interior compartments and seats for the crew. Five built for the City of New York; one with portable floodlighting equipment and four with 10KW power take off driven generator and elevator controlled floodlights. Three built for the City of Philadelphia, with 10KW elevator controlled floodlights.

The STANDARD MODEL—for the average Fire Department, with or without elevator floodlights, equipped with exterior compartments, and the interior equipped with mounted stretchers and seats for the crew. This model in service in many Fire Departments for over 10 years.

Write for detailed construction and electrical specifications, photographs and prices and state your requirements.

Some territory open for agents.
Builders of Fire Department Pumpers and Airport Crash Trucks.

AFE APPROVED FIRE EQUIPMENT CO.
ROCKVILLE CENTRE • NEW YORK

flash light bulb by radar under flight conditions in all metal aircraft.

2) Photo flashbulbs are not fired even under extreme conditions, such as electrostatic discharge.

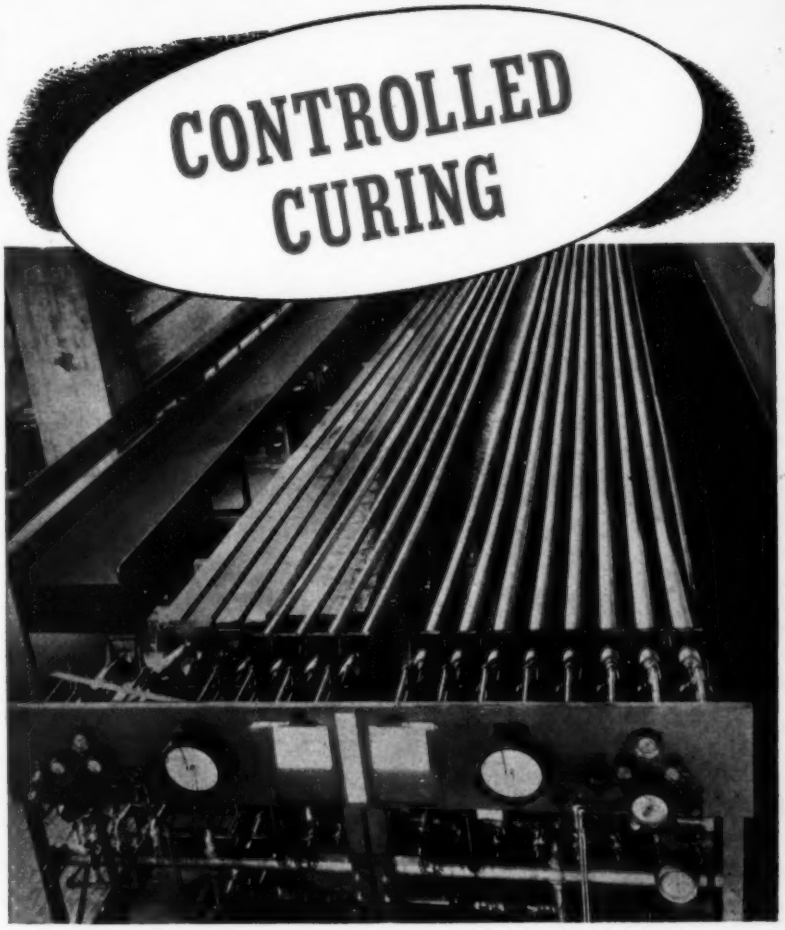
3) No fire resulted even when defective flash bulbs were exploded in an atmosphere of gasoline vapor.

4) "The possibility of firing modern photo flash bulbs by ordinary impact and resultant friction is extremely remote."

* * *

Hot Off the News Ticker

About 300,000 gallons of high octane gasoline were destroyed on the night of May 2, 1949, at Eebee Field, Alexandria, Va., in a two-hour fire believed set off by lightning. . . . In April, the Belgrade radio reported that a Yugoslav engineer had invented a match that can be used 100 times. It was placed on sale May 1 and described as four inches long and somewhat thicker than the ordinary match. It reportedly uses a newly discovered chemical. . . . Countess Clare Cowley, widow of the third Earl of Cowley, died May 8, 1949, in a fire in her home, Seagry House, near Chippenham in Wiltshire, England. She was 70 years old. Six other persons escaped from the fire. Three women were rescued from the roof. . . . Hiroshima Nakamura, 16-year-old war orphan, saved 11 small children from death in a fire that destroyed an orphanage near Tokyo, Japan. The children, ranging from 4 to 6 in age, were trapped on the second floor of the orphanage from which most of the 47 occupants had reached safety. Nakamura rushed to the second floor and wrapped bed clothing around each child. He dropped nine of them to the ground, then jumped with the last two in his arms. . . . Between April 1 and May 4, 1949, there were over 800 fires in forest brush and marsh lands of Minnesota. More than 140,000 acres were burned over. . . . Explosion of a gun mount during anti-aircraft practice aboard the U. S. Destroyer Hollister killed four and injured ten other seamen. . . . Fire on the night of April 29, 1949, swept a warehouse in Edinburgh, Scotland, containing 125,000 gallons of Scotch whiskey intended for export. Barrels burst from heat and blazing whiskey streamed out of the building blocking near-by rail lines (write your own caption!) . . . In Manitoba, fire fighters were rushed into Swan River Valley to control forest fires that threatened the entire Porcupine Forest Reserve, lying north of Swan River, between the west shore of Lake Winnipegosis and the Manitoba-Saskatchewan provincial boundary. April was the driest on record in Manitoba. . . . Three of six American soldiers, burned in a fire in the Mannheim military prison, died. Three others were in serious condition. The fire was reported to have started in cleaning fluid. . . . The small fishing schooner Uronick reported carrying 500 gallons of gasoline, was afire off Trinity Bay in Northern New Foundland on May 17, 1949. The crew was said to be safe but the craft was a danger to shipping. . . . A Japanese news agency reported from Saporo, Hokkaido, on May 11, that 4,000 persons were left homeless by fire that destroyed 600 homes in the village of Furuhira. . . . William Hoke, 23, was burned to death in a plane crash in the Rio Grande Valley. The accident occurred as he was dusting cotton on a



FOR "CONTROL IN ACTION"

Both the lining and the jacket of a fire hose are important factors in insuring reliable performance under the most extreme tests of service.

As the result of *controlled curing* and *balanced weaving* in the manufacture of Eureka Fire Hose, excessive writhing, twisting and elongation are prevented.

These refinements in vulcanization and weaving, together with step-by-step testing of the product during manufacture, are three of the many reasons for the long life, efficiency and dependability of Eureka Fire Hose.

EUREKA

"For greater protection to life and property"

EUREKA FIRE HOSE

Division of United States Rubber Company

195 Hudson Street • • • • New York 13, New York

farm—his first—and last—dusting flight. . . . Nine firefighting vehicles, including trucks, ambulances and emergency cars were flown to West Berlin (Germany) in April to augment fire protection in the then blockaded city. . . . Ten were killed and 70 injured in a crazyquilt pattern of tornados that swept across Oklahoma and part of northern Texas on May 1. North Base, a Naval Air Station, now part of the University of Oklahoma, was hard hit. No serious fires resulted. . . . A wind-driven ground fire, believed of malicious origin, swept within 25 feet of untenanted YMCA camp buildings near Port Jervis, N. Y., before being controlled. . . . Largest plane in the world—Convair's giant XC-99 transport, flew with a 100,000 pound load, in April. Designed to carry 400 men fully armed or 300 litter patients, the craft is next thing to a "flying tank farm." . . . Three crewmen were hospitalized after an explosion and fire in the 250-ton tanker Elkhound as it was unloading a cargo of oil at Newcastle, N. B.

* * *

Paper Cup Bomb Proves Dangerous

Anthony J. Iannarone, 18, a student of Rutgers University, New Brunswick, N. J., lost both hands and suffered possible chest injuries and two other students were slightly burned in an explosion of a makeshift bomb in a paper drinking cup on May 5, 1949. All the victims were freshmen.

School authorities said the students had taken chemicals they were not authorized to use and mixed them in a paper cup while their instructor was out of the room. The resulting explosion did slight damage to the laboratory and did not injure about 29 other students in the class.

Following the accident, fellow students at the University launched a drive to collect funds for the hapless victim.

MORE THAN JUST A BOOSTER PUMP

It's the Gorman-Rupp Dual Fire Fighter. Use it to fight fires direct -- use it where water supply is inaccessible to the truck pumper. It throws 100 gallons at 70 pounds pressure or 80 gallons at 80 pounds pressure. Primes in 15 to 30 seconds with a positive acting exhaust priming device. No adjustments between priming and pumping -- compact -- easily carried by two men.

Use it as a booster pump. Valuable for dewatering and many other important jobs -- wherever you desire to save wear and costly damage to expensive truck pumpers.

Write for Bulletin FD-3. Get complete information on Gorman-Rupp's Dual Fire Fighter. Learn how little it costs and why it's the easiest pump to maintain.

A few territories open to recognized fire equipment distributors.

THE GORMAN-RUPP COMPANY

305 BOWMAN STREET . MANSFIELD, OHIO

Questions and Answers

Solving for Nozzle Pressure

To the Editor:

I would appreciate your solving the following hydraulic problems for me:

1. An engine is pumping at 150 pounds pressure through 400 feet of 2½-inch hose reduced to 200 feet of 1½-inch hose equipped with a ¼-inch tip. What will be the nozzle pressure?

2. An engine is pumping at 150 pounds pump pressure through 400 feet of 2½-inch hose branched into two lines of 1½-inch hose each 100 feet long and each equipped with ¼-inch nozzle. What will be the nozzle pressure?

3. An engine is pumping through 400 feet of 2½-inch hose equipped with a spray nozzle. Nozzle pressure is 100 pounds. What is its equivalent in a plain nozzle?

H. F. W.

Answer: The solution to the first problem you give involves a single line made up of 400 feet of 2½-inch and 200 feet of 1½-inch hose equipped with ¼-inch tip and supplied by an engine at 150 pounds pressure. The calculations are as follows:

Change the 400 feet of 2½-inch hose to 1½-inch, employing the factor .074.

400×.074=29.6 feet of 1½-inch hose.

200+29.6=229.6 feet of 1½-inch hose in the layout.

N.P.=E.P.÷(1+KL), where engine pressure is 150 pounds; K for 1½-inch hose and ¼-inch tip, =.0084; and L, the number of 50-foot lengths of hose in the line, =229.6÷50, or 4.592.

Then N.P.=150÷(1+.0084×4.592)
=150÷1.0386
=144 pounds.

The solution for the second problem, in which an engine at 150 pounds pressure is pumping through 400 feet of 2½-inch hose branched into two 100-foot lines of 1½-inch hose, each equipped with a ¼-inch nozzle, is as follows:

First change the 400 feet of 2½-inch hose to 1½-inch.

400×.074=29.6 feet of 1½-inch hose.

Then combine the two parallel lines of 1½-inch hose into a single line, employing the factor 3.6.

100÷3.6=27.78.

Then the entire layout is equivalent to a single line of 1½-inch hose 29.6+27.78, or 57.38 feet in length.

Next combine the two ¼-inch tips into a single nozzle.

¼×¼=1/16=.0625. Two times .0625 =.125.

The square root of .125=.35, which is the approximate diameter of a nozzle

equal in cross-section area to the two ¼-inch nozzles.

The nearest size standard tip to a nozzle of .35 inch diameter is a ⅜-inch nozzle, which has a diameter of .375 inch.

K for ⅜-inch nozzle on 1½-inch hose is .036.

L=57.38÷50=1.147.

E.P.=150 pounds.

Then N.P.=150÷(1+KL)
=150÷(1+.036×1.147)
=150÷1.0413
=144 pounds approximately.

An answer cannot be given for the third problem you submit, which involves the use of a spray nozzle at 100 pounds pressure, for the reason that no two types of spray, or fog, nozzles have the same discharge at the same pressure. Unless the type of nozzle were known and the discharge at the pressure given were also known, calculations are not possible.

Engine Pressure on Relay Layout

To the Editor:

Regarding the question and answer on Page 294 of the April, 1949, issue of FIRE ENGINEERING, submitted by F. H. S., your answer that Engine No. 2 would have 83 pounds, and the engine pressure on No. 1 will be equal to 83 + 45 + 5 inlet pressure to Engine No. 2 = 133 pounds, I believe, is incorrect.

I understand that the first engine need only supply the second engine, which would require only 45 pounds friction loss in the 500 feet of 3-inch hose plus 5 pounds inlet pressure for Engine No. 2. In other words, the pressure at Engine No. 1 should be 50 pounds instead of 133 pounds.

SAM PASTORELLA
Rochester, N. Y.

Answer: You are right! One hundred thirty-three pounds would be the pressure at Engine No. 1 if Engine No. 2 were not in the line. But Engine No. 2 is developing 83 pounds pressure so all Engine No. 1 will have to develop will be 45 + 5, or 50 pounds.

Radio Gets Lift by FCC

In May 1949 the Federal Communications Commission issued a comprehensive Report and Order making over-all revisions in the rules governing, and the frequencies employed by, the varied specialized non-broadcast radio services. Effective July 1, 1949, the Commission generally gave more frequencies to public service organizations while in some cases it cut down allocations to special types of mobile wireless telephones. It returned to these mobile units the 44-50 megacycle band once taken away from them and assigned to television.

In brief, the Commission made these revisions in the major service categories:

Land Transportation Radio Services is a new category, covering the Taxicab Radio Service, the Railroad Radio Service, the Intercity Bus Radio Service, the Highway Truck Radio Service, the Urban Transit Radio Service, and the Automobile Emergency Service. Revised frequency allocations provides 47

use "Wetter Water" Fire Fighting

WITH UNOX PENETRANT

TRADE-MARK

"It's like turning out the light"

▶ Leading fire chiefs say that "Wetter Water" fire fighting is the greatest improvement since fog. This new "aggressive" water knocks out most fires three to four times faster than plain water. It will extinguish fires in baled materials that plain water can't even reach. For the best "Wetter Water"— get UNOX Fire-Fighting Penetrant.

Try UNOX Penetrant on all class A fires and class B spill fires, and you'll always use it. It spreads and covers, but most important— IT PENETRATES QUICKER. That gets the water to the heart of a fire and puts it out. UNOX Penetrant means quicker knockdowns with much less water, little or no water damage, less punishment to firemen, and fewer rekindles. UNOX Penetrant can be used with a proportioner; or premixed in booster tanks or tank trucks, sprinkler systems, hand extinguishers, or "Indian" Pumps.

Get the full story from the dealer nearest you on UNOX Penetrant, a product of Carbide and Carbon Chemicals Corporation.

Order from the dealer nearest you

ABERDEEN, S. D.
Warren C. Little
1306 N. Lincoln St.

BALTIMORE, MD.
F. L. Anderson Co.
Bush and Russell Sts.

BIRMINGHAM, ALA.
"L.P." Harless Co.
2627 Seventh Ave. S.

CHICAGO, ILL.
Viking Auto. Sprinkler Co.
5520 N. Wolcott Ave.

DALLAS, TEXAS.
Texas Auto. Sprinkler Co.
2330 Summer St.

DOVER, DEL.
Capital Fire Equip. Co.
205 W. Division St.

HAMDEN, CONN.
O. B. Maxwell Co.
1224 Dixwell Ave.

KANSAS CITY, MO.
Walton-Viking Co., Inc.
2518-20 Holmes St.

LOS ANGELES, CAL.
Sharpe Engineering Co.
416 W. Eighth St.

MEMPHIS, TENN.
Shaw Supply Co.
857 S. Parkway E.

NEW YORK, N. Y.
Moon Fire, Inc.
26 Ferry St.

NORTH TARRYTOWN, N. Y.
Wesco Fire Equip. Co.
186 Cortlandt St.

PEORIA, ILL.
Couch and Heyle
1016 S. Adams St.

PHILADELPHIA, PA.
Nat. Alexander Co., Inc.
401 N. Broad St.

PITTSBURGH, PA.
Safety First Supply Co.
530 Fernando St.

PORTLAND, ORE.
Munnell and Sherrill, Inc.
480 S. First Ave.

SAN FRANCISCO, CAL.
Coast Fire Equip. Co.
272 Fremont St.

WINSTON-SALEM, N. C.
Stop Fire Equip. Co.
624 W. Fourth St.

UNOX is a registered trade-mark of C.&C.C.C.

frequencies for these services in the 152-162 Mc band.

Taxicab Radio Service gets 8 frequencies in the 152-162 Mc band. Highway Truck Radio gets 7 frequencies in the 30-44 Mc band and Intercity gets 16 in this same band. Seven frequencies in the 44-50 Mc band go to Urban Transit Radio Service while the newly created Automobile Emergency Radio Service is provided one frequency in the 30-44 Mc band.

Domestic Public Mobile Radio Services designed to furnish a common carrier radio telephone service to the general public receives 2 allocations of 24 frequencies in the 30-44 Mc range and 20 in the 152-162 Mc range.

A major category known as *Industrial Radio Services* covering Power, Petroleum, Forest Products, Motion Picture, etc., is assigned frequencies in the 25-30, 44-50, 152-162 and other megacycle bands.

Newspapers are given more frequencies to further their operations.

Of most interest to the fire services is the establishment of another new category known as *Public Safety Radio Services*. This provides rules governing the Police, Fire, Forestry-Conservation, Highway Maintenance and Special Emergency Radio Services, superseding entirely Part 10 of the old rules. It also "supersedes all orders and public notices governing frequency assignments for the Emergency Radio Service heretofore issued by the Commission" with one minor exception.

Under the new rules, all Public Safety Radio Services have gained exclusive frequency allocations in the 44-50 Mc band.

Police Radio Service loses some frequencies in the 152-162 Mc band but is compensated by allocation of an equal number of channels in the 158-159 Mc band.

Concerning Fire Radio Service, the Commission says: "In recognition of the importance of radio communication in fire fighting, the Commission has extended eligibility in the Fire Radio Service to rural and suburban volunteer fire companies, which comprise the largest number of fire departments in this country. The Commission also removed population restrictions on the eligibility of Fire Radio Stations under Part 10 of the old rules."

Forestry Conservation Service: Whereas formerly, radio could only be used in connection with forest-fire fighting activities, it will now be possible for states and others eligible to use radio on a wide range of conservation purposes—from flood control to enforcement of game laws, etc. From a former 14 shared frequencies, the Service now will receive 4 exclusive frequencies in the 152-162 Mc band.

Highway Maintenance Service, used chiefly by state highway departments, will use the 44-50 Mc band and some 30-40 and 152-162 Mc channels on a shared basis.

The Special Emergency Service will now include physicians in remote areas, ambulance service, beach patrols, school bus operators, etc. Additional frequencies are provided this group.

The text of the Commission's covering Report and Order as well as the new Rules are published in the May 6th issue of the "Federal Register," procurable at the Superintendent of Documents, Government Printing Office, Washington 25, D. C. at nominal cost.

Connecticut Cracks Down

In March of this year a Waterbury, Conn., painter was fined $50 after Fire Marshal Eugene Legge of Waterbury Fire Department testified that the former had started a fire in a 17-apartment building, in which he lives, by falling asleep while smoking in bed.

The fire caused considerable damage to his apartment and a hallway before being extinguished about 2:15 A.M. by firemen using three hoselines. One woman was rescued from the building by firemen and another was treated for cuts of the hands sustained when she broke a window of her apartment.

The painter admitted also having started a fire in his room several days previously by falling asleep while smoking. In this fire, the mattress was damaged but no call was received at fire headquarters.

The culprit was charged with violation of a state statute pertaining to starting fires by cigars, cigarettes and so forth. Imposing sentence, the Judge agreed with Marshal Legge that a serious fire could have resulted.

The statute under which the action was taken reads as follows:

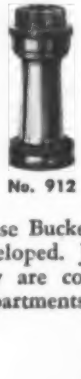
"Sec. 1694C General Statutes, State of Connecticut: Fires kindled by Cigars or Burning Substances. No person shall throw down or drop a lighted match, cigar, cigarette or other burning substance, in combustible material or in close proximity thereto. Any person who shall violate any provision of this section and thereby kindle a fire shall be fined not more than five hundred dollars or imprisonment not more than six months or both."

Where there's smoke, there's a

Buckeye

Shut-off Nozzle!

No. 900

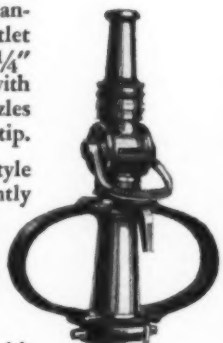


No. 912

No. 900. A 2½" Shut-off Nozzle with play-pipe, complete with ladder hook and swivel leather handles. All brass body. Tip outlet can be furnished from ½" to 1¼" diameters. Shown equipped with No. 911 Plain Tip, but all nozzles are available with any Buckeye tip.

No. 902. A 2½" New York Style Shut-off Nozzle with permanently attached play-pipe. Also shown equipped with No. 911 plain tip. Can be furnished without brass swivel handles and without tip, if desired.

No. 912. A threaded type tip with protective ring. There's a Buckeye nozzle tip for every purpose.



No. 902

These Buckeye Nozzles are part of the finest line of nozzles ever developed. Just how well they are designed, just how carefully they are constructed is amply demonstrated by the loyalty of Departments the country over.

Buckeye

FIRE DEPARTMENT ACCESSORIES

BUCKEYE IRON & BRASS WORKS, DEPARTMENT E

DAYTON 1, OHIO

Tunnel Fire

(*Continued from page* 419)

York and three different sources in New Jersey.

Pressure can be regulated to suit requirements and the capacity is sufficient to provide 80 PSI at the highest point of the roadway. Water mains in the two tunnels are interconnected at five points, so that at any single point in either tunnel the entire capacity of the line will be available. Valves are located at points approximately 480 ft. apart, so that any damaged section may be cut out for repairs without affecting the balance of the line. Hose connections are in niches provided with bronze doors (originally, each outlet had 100 ft. of 2½-inch cotton, rubber lined DJ hose but later, when it was found that hose deteriorated rapidly in the tunnel, it was removed).

The four ventilating buildings are each equipped with two 6-in. standpipes and fire department connections. Four automatic pumps of 300 GPM capacity supply 3,000 gal. tanks located under the roofs of each building.

First Aid Fire Equipment

Ready-to-use equipment in the tunnels, in addition to that carried on apparatus, is reported to include: 433 five-gal. foam extinguishers; 165 of two and a half gal. and 120 of one and one half qts. These extinguishers are located in wall cabinets on the sidewalk side of the tunnel, about 240 ft. apart. The extinguishers are arranged in sets of five, and singly, the sets of five having four units of five gal. each and one of 2½ gal. On the opposite wall is a singleton of 5 gal. Sand boxes are placed every 500 ft., each containing 10 cu. ft. of sand. Telephones are located every 480 ft. in the refuge niches on catwalks which are provided for patrolmen.

Fire Alarm and Traffic Control

Every 500 ft. there is a fire alarm box of the "push-the-button" type. They are located on the wall where policemen patrol the sidewalk. The boxes are designated by signs. The fire extinguishers are designated by lights, which serve the dual purpose of indicating that the heating coils in the cabinets are functioning to keep the extinguisher mixtures from freezing.

When the fire alarm button is pushed, a fire signal registers in both the New York and New Jersey offices of the tunnel. Traffic signal controls have been placed in each tunnel at intervals of 480 ft. The traffic signal consists of the word "STOP ENGINE" which can be used in case of emergency; a flashing light also operates to indicate to the traffic officer the necessity of bringing traffic into one lane so that the emergency fire and crash truck can enter the tunnel in the other lane.

Traffic control stations are located every 480 ft. with repeat signals midway between. The traffic control stations consist of two buttons; one of these buttons will set all signals against traffic between the traffic control station where the signal is given and the tunnel entrance; it will also give a record in the central control station of the traffic signal sent. These traffic signals may be cleared by the traffic control operator or by the policeman in the tunnel. In case the signals are set against traffic simultaneously at two points in the tun-

HIT OF THE SHOW

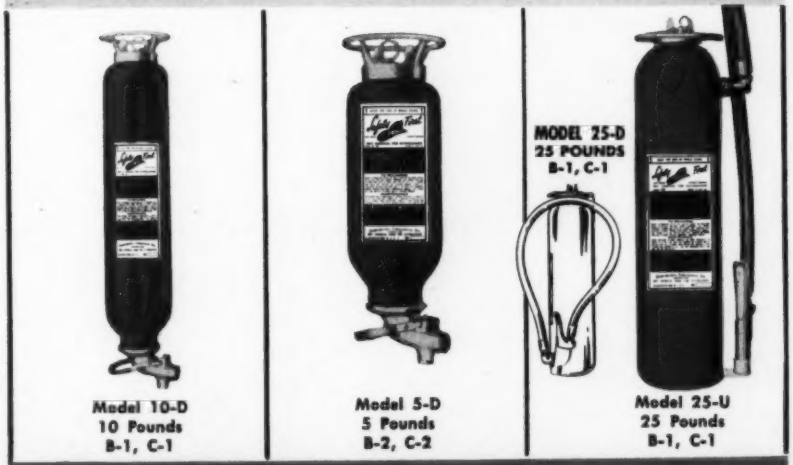
Safety First

HAND PORTABLE
DRY CHEMICAL
FIRE EXTINGUISHERS

Designed and developed for every industrial use . . . for in-plant protection . . . for trucks . . . busses . . . all motorized equipment. Smothers 90% of all fires *instantly* and *safely!*

Safety First presents the greatest, the most effective, the most complete line of hand portable dry chemical fire extinguishers available today!

The most complete line on the market today!



Model 10-D
10 Pounds
B-1, C-1

Model 5-D
5 Pounds
B-2, C-2

Model 25-U
25 Pounds
B-1, C-1

SAFETY FIRST COMPANY
ELMSFORD, NEW YORK

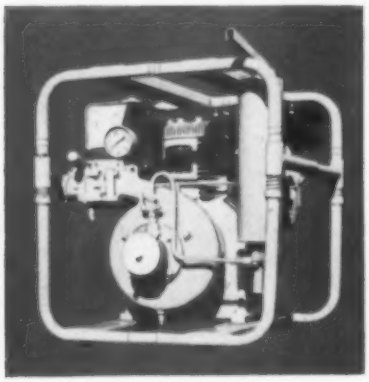
More Power!
More Compact!
Lighter!

HALE Type FZZ

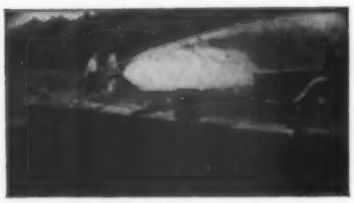
Portable Pumping Unit

With more power—and with a more compact design resulting in lighter weight—the *new* Hale Type FZZ is another example of constant Hale research resulting in constant improvement.

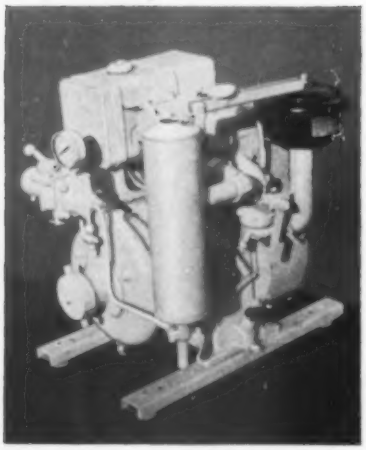
The FZZ pumps from draft 60 G.P.M. at 90 lbs. up to 150 U. S. gallons at 30 lbs. Ample reserve capacity.



Above—FZZ Mounted on Carrying Frame



Pumping Solid Stream and Fog



FZZ mounted on rubber cushioned steel channels; also available on truck-type wheels.

Write today for NEW FOLDER on the Hale Type FZZ Unit.
Ask for demonstration.

HALE FIRE PUMP CO., Conshohocken, Pa.

nel, it is impossible for the operator at the station farthest from the tunnel entrance to clear signals back to the other point where the signal has been set. The signals normally are operated from the lighting circuit but an emergency connection to the storage battery is provided.

Fire Fighting Apparatus

Each tube has a combination fire-fighting and wrecking truck. They are located in quarters on opposite sides of the river near the exit ramps. They are electrically operated and have double steering apparatus (one on each end), as it is not possible to turn them around in the tunnel. The trucks weigh eight tons and each has two five-ton cranes which fold out of the way. Each carries two portable "dollies" which can be slipped under a wreck to supply the necessary traction to remove a derelict out of the tunnel.

The trucks carry one 30 ft. extension ladder, one 16 ft. ladder, 200 ft. of 2½-in. hose, hooks, axes, jacks, a 200 gal. tank of water, 200 lbs. of dry foam powder with 50 lbs. of it in the magazine to mix with water for instantaneous use. Each truck is capable of supplying 1,600 gals. of foam, which can be delivered by a special generator supplied from the motor of the truck. Each carries six CTC extinguishers and a 100 gal. pump to supply water from the standpipe system for additional generation of fire foam.

Each truck carries two (one gal.) cans of gasoline for emergency filling of empty gasoline tanks; each truck also has an inhalator, a first aid kit, rubber coats, boots, gloves and firehats for eight men, it being the custom to use policemen in the tubes by pressing them into fire service. The trucks have four portable searchlights. There is also on each truck fourteen 20-ft. x 14-ft. tarpaulins to cover vehicles or to protect them from catching fire or blistering.

Procedure in Time of Fire

When a fire or an emergency signal is recorded in the central office of the tunnel, it registers on both the New York and New Jersey sides. If the signal comes from the New Jersey bound tube, the emergency truck on the New Jersey side responds with two men, picking up on the way five or six fire-policemen. The response is against traffic, because the emergency signal automatically stops all vehicles behind the vehicle in trouble. The vehicles ahead will continue on, leaving at least one end of the trouble point open and clear for operations of the emergency crew and truck. This also simplifies the removal of the vehicle in trouble by simply slinging it up under the crane of the emergency truck which will reverse its engine and head out of the tube with its burden.

A "Class 3" special alarm box in the control room of the tunnel when pulled brings units of the New York Fire Department to the New York tunnel entrance. Jersey City firemen are alerted through a similar hookup. There are fire alarm boxes located near the two tunnel entrances. Tunnel emergency calls, however, do not go direct to the respective fire departments.

It was not, nor is it now, the intention to have municipal fire apparatus enter the tunnel in an emergency be-

"But how was that? You have had a good job and a steady income for years."

"My family kept growing and my expenses always outdistanced my paycheck even with several raises."

"You seem to be getting along all right now. What did you do?"

"I discovered a simple way to supplement my income. I invested a small part of my savings in a few Hamilton coin-operated scales and to my amazement I was shortly realizing over 50% profit."

"Doesn't it take a lot of your time?"

"That is the wonderful part of it. Hamilton Scales are extremely simple in construction and never require any service. My son, Jack, and I visit each scale only three or four times a year to collect the pennies. I have over a hundred scales now and I figure we each average about one day's work a month to run our route."

"How much do you make on a hundred Hamilton Scales?"

"My net income has averaged $300.00 per month now for several years."

"That's amazing, do you suppose I can start a route too?"

"You sure can, just write direct to Hamilton Scale Company, they will give you all the information. Hamiltons carry the lowest price to operators and are the best value among the approved scales. You can buy them on deferred payments too!"

"That's for me. I will write them today. Thanks for the tip, Bill."

HAMILTON SCALE CO.
DEPT. D, 214 OLIVER STREET
TOLEDO 4, OHIO

HAMILTON SCALES

cause to do so they would have to travel the entire length of the tube to find exit.

All told, there are about 300 men trained for the combination job of tunnel fire-police.

The Round Table

(*Continued from page* 432)

aid appliances are inspected and demonstrated. If there aren't any, recommendations follow. Ordinary hazards are corrected at the time of inspection.

Safeguards to life in these church establishments are not equal to those in the public schools.

Flammable decorations are prohibited. Motion picture projection is permitted when 16 mm safety film is used. Only approved electrical appliances are allowed. Fire inspectors cover these establishments regularly.

We have found a willingness to cooperate in most cases. This field of inspection is new to us, but we are making progress.

A. W. Bilby, Chief, Montclair, N. J.: The recognized standards for life safety in all places of assembly are enforced. We have a building code which requires high standards. For example, it states, "Frame construction shall not exceed thirty feet, provided that churches and schools of such construction shall not be more than one story high." The "Suggested Fire Prevention Ordinance" as recommended by the National Board of Fire Underwriters has been adopted by Montclair. We have a Fire Prevention Bureau and regular inspections are made of all places of assembly.

The safeguards to life in these establishments are equal to those in the public schools, except that our public schools are not of frame construction.

No flammable decorations are permitted. Form notices are sent to schools, churches, organizations, notifying them to get the approval of the fire department for the installation of motion picture equipment, electrical equipment or decorations.

Each inspection district has a list of the places where life safety is required such as schools, churches, meeting halls, hospitals, nursing homes, day nurseries, hotels and rooming houses.

We have found church organizations willing to cooperate with us.

R. C. McRonald, Chief, London, Ont.; When more than usual attendance is expected for social or other functions, supervision is provided by the Fire Prevention staff to prevent overcrowding, check of exit facilities, decorations and lighting.

The comparison with public schools is favorable with the exception of seating. Many church organizations use folding chairs which is not considered good practice, but necessary, because the hall or area must be used for other purposes after a function and this permits the removal and storage of seats.

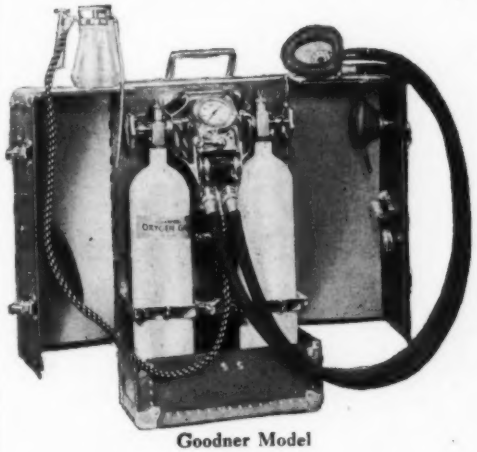
The fire department covers these estal lishments in their regular tours.

We found these organizations cooperative. When hazardous conditions are brought to the attention of the proper church authority, cooperation is excellent. But where funds are required to correct structural and

Chief, in case of a Drowning this Summer—

Are You Prepared?

THE STEPHENSON RESUSCITATOR



Goodner Model

is ideally suited for treating victims of submersion. This type of asphyxia is usually complicated by froth due to a throat spasm. The STEPHENSON RESUSCITATOR *instantly signals* the appearance of such froth, and provides an excellent aspirator—the first to be intermittent or continuous as desired —to remove this froth. This feature, plus the lowering of operating pressures and the mixing of air with oxygen makes the STEPHENSON RESUSCITATOR the ideal instrument to effectively cope with submersion.

Write for literature or free demonstration.

RESUSCITATOR
ASPIRATOR
ASSISTOR
INHALATOR

STEPHENSON CORPORATION
RED BANK · NEW JERSEY

HOWE Fire Truck Equipment to Meet Every Service
Established 1872
HOWE FIRE APPARATUS COMPANY, 1402 West 22nd Street, Anderson, Indiana

other hazards, it is necessary to be patient as often considerable time is required to raise the necessary money.

William T. Connolley, Chief, Pawtucket, R. I.: Our Fire Prevention Bureau does not approve any church, school, or any place of congregation that does not have proper escapes and extinguishers. This rule applies to small or large groups. We do not allow smoking. The same rule applies to all schools and the cooperation received is equal in all the schools of our city.

Flammable decorations or any doubtful equipment that might be a fire hazard is not permitted. Motion picture machines are allowed by state law, but booths must contain carbon dioxide extinguishers.

The fire inspectors cover these places more often than their regular tours of inspection.

The clergy have been most cooperative and willing. They are the ones with whom we deal and they assume the responsibility.

Lisle L. Hadlock, Chief, Ogden, Utah: Regular inspections are made by the Fire Prevention Bureau of churches and church schools. Overcrowding, use of loose chairs in aisles, etc., are prohibited.

Most churches in Ogden are well kept. However, I believe the public school system is more adequately equipped with life safeguards than are the churches.

Flammable decorations and motion picture projectors using nitro-cellulose film are prohibited; electric appliances such as cooking facilities are allowed.

Most churches in this area are Latter Day Saints (Mormon). They are very willing to cooperate. At the present time the church officials have instigated a fire prevention program in all their buildings.

R. H. Earle, Chief, Massillion, Ohio: About twice each year we send out letters to all churches, etc., warning them of overcrowding and advising on the use of flammable materials.

These properties are inspected twice a year and they are notified of the hazards found and copies are kept on file in the Fire Prevention Bureau. In most cases they are not as cooperative as public schools.

The public schools have recently installed complete automatic fire detection and alarm equipment connected to fire headquarters in all school buildings.

* * *

The following replies are in answer to a previous Round Table on firemen's training programs.

Charles L. Slade, Chief, Des Moines, Ia.: Our drill program continues the year round under the direction of an assistant chief as drillmaster. When the weather does not permit outside drilling, as is usually the case in this part of the country during the winter months, we resort to an inside schedule.

As for improving training in the service, I believe from close observation that the relations between the members of civil service commissions and the heads of the departments must be improved, so credit could be given men who were improving their ability by training. If they could be examined and graded upon their ability as firemen, then I feel any training program could be expanded and would be cheerfully accepted by the majority of the members of the department. However, when examinations are held that do not do this, when a chief officer is not given an opportunity to reward a man for work well done during promotional examination, "because I am informed the Civil Service Assembly calls that politics" then men cannot be expected to be too enthusiastic about any advanced training program. I believe that if the time could come when civil service commissioners could be chosen from among personnel men, technical men with fire prevention training and who knew something about writing examinations for a fire department, instead of lawyers, doctors, insurance men, etc., than I am sure we would have examinations based on advanced training. In promotional examinations, the most valuable man would then at least have a chance to win, and bigger and better training programs would be warranted. I realize this a little off the question, but I am sure it is one thing that could be done to improve training.

Alex M. Andrzejewski, Chief, South Bend, Ind.: South Bend, a city in the 100,000 to 150,000 class has a drill school under the direction of Captain Richard Duch.

Since the first of January, 1948, we have had 47 new men appointed to the department, as well as some promotions. These men had to be schooled in the fundamentals of fire

Trust GOODALL to Give You the BEST...Always!

IN FIRE HOSE...

COTTON RUBBER LINED—the *quality* hose with an unequalled reputation for strength, durability and safety. Backed by 78 years of hose-building experience. Flexible, light in weight, easy to handle. Single or double jacket, all standard sizes.

In the same *quality* class—Goodall booster hose, suction hose, underwriters' unlined linen.

IN BOOTS AND COATS...

STYLE "SSS" BOOTS—for super-severe service, *plus* comfort. Made of tough black rubber, with slip-proof soles, "ladder shank" arch supports and other *quality* features.

STYLE "SSS" COATS—in dull-finish black rubber with a smooth, tough surface that resists snagging. Designed for comfort; built for long, hard wear.

Contact Our Nearest Branch for Details and Prices.

GOODALL RUBBER COMPANY

GENERAL OFFICES, MILLS and EXPORT DIVISION, TRENTON, N. J.

Branches: Philadelphia • New York • Boston • Pittsburgh • Chicago • St. Paul • Los Angeles San Francisco • Seattle • Salt Lake City • Denver • Houston • Distributors in Other Principal Cities

Est. 1870

fighting as well as drilled in practical evolutions, so the season of the year could not even be considered. They have received inside lectures and instruction as well as outside drills.

Our ladder evolutions have been conducted at Notre Dame Stadium and our pump operation instruction at Pinhook Park Lagoon. We have a classroom seating 150 and all the necessary equipment, including a 750-gallon pump assigned to the drill school.

In Indiana, we have the Indiana Fire Service Training Schools, under the direction of Francis Hartman at Purdue University. The help they have given us, along with our officers "meetings" where we adopt new methods and techniques to local conditions through our drill school, is in our opinion, most practical.

Leo B. Barry, Chief, Utica, N. Y.: Outside training and instruction is given from May until cold weather in the fall.

Our department instructor gives two hours of inside instruction to every company in their own quarters each week from the time outside school ends at our training grounds until it opens in the spring.

I believe it should be the goal of every fire department to have a training ground with complete water and hydrant system, including drafting facilities and a modern training tower. The grounds should have adequate buildings and equipment to simulate any type of fire or emergency possible in our respective areas, so the men can be trained under actual fire conditions and not by theory alone. The only way we will have this is for every chief to campaign continuously until every area has proper training facilities for all firemen.

Hoodoo Fire Alarm Box

(*Continued from page* 426)

On Feb. 12 and May 25, 1940, a pair of two-alarm fires sounded from Box 526 again caused considerable damage.

Although Box 526 is now coming into its own as a "hoodoo" station, veteran Buffalo firemen will probably continue to maintain that the tapping in of Box 29 will forever send chills down their spines.

Fire Prevention Campaign Results Reported Good

A two-year campaign against fire waste stemming from the President's Conference on Fire Prevention has produced "very good" results in six states and much effective work in nineteen others, A. Bruce Bielaski, executive director of the Conference and assistant general manager of the National Board of Fire Underwriters, reported recently.

Ohio, Minnesota, Maine, and Massachusetts led the nation in making effective the Action Program of the Conference, Mr. Bielaski told members of the National Fire Waste Council at a meeting in Washington, D. C. He said that only ten states had failed to take some effective action during the two-year drive to implement the action program adopted by the Conference in May, 1947.

"The time has come when some fresh inspiration or fresh aid is needed if the

THE ONLY TWO STAGE PUMP WITH 3 STAGE PERFORMANCE

Barton-American
DUPLEX MULTI-STAGE
Centrifugal Fire Pump

Two independent pumps driven by individual gear trains —breakdown of one still leaves one in operation — makes possible three operating characteristics.

1. Large capacities at normal pressures delivered through the capacity pump only.

2. Normal high pressures delivered through the high pressure pump only.

3. Pressures as high as 400 pounds are delivered with both pumps operating in series and at LOW engine speed.

The Barton-American Duplex-Multistage is the ONLY fire pump that has three distinct and separate operating characteristics, yet has only TWO impellers.

Positive one point lubrication. Ball bearings and gears are all located in pump transmission case, using same grade of oil as truck engine. No grease cups to be overlooked — no water lubricated bearings to run dry and fail.

Delivers 400 pounds pressure for fog gun service.

AMERICAN-MARSH PUMPS
BATTLE CREEK MICHIGAN
U. S. A.

IN CANADA: C. E. HICKEY & SONS, LTD., HAMILTON, ONTARIO

maximum results of the President's Conference are to be realized."

Mr. Bielaski said that varied campaigns against fire waste had been waged in many states. Among the steps taken were improvements in firemen's training, provision of new equipment for fire departments, special inspections of whole towns, campaigns against special fire hazards, and passage of a law against the manufacture of flammable clothing.

He said that State Conferences on Fire Prevention were called by the Governors of Alabama, Arkansas, Connecticut, Florida, Illinois, Iowa, Kansas, Maine, Maryland, Massachusetts, Minnesota, Mississippi, Nebraska, New Hampshire, New Jersey, Ohio, Pennsylvania, Rhode Island, Tennessee, Texas, Utah, West Virginia, and Wisconsin. Several other Governors have announced plans for future conferences, Mr. Bielaski added.

April Fire Losses Show Decrease

For the fourth successive month, fire destruction in the United States decreased during April, totalling $55,290,000, a decrease of 13.3 per cent from losses of $63,751,000 in April last year, it was announced by W. E. Mallalieu, General Manager of the National Board of Fire Underwriters.

April's losses also showed a marked seasonal decrease of 17.7 per cent from losses of $67,218,000 recorded in March, 1949.

Destruction by fire during the first four months of 1949 totalled $242,858,000, a decrease of $29,660,000 or 10.9 per cent from an estimated $272,518,000 fire loss during the first four months of 1948.

Fire waste during the 12 months period ending April 30 is estimated at $681,454,000 by the National Board. This is a decrease of 3.1 per cent from losses of $703,262,000 for the 12 months period ending April 30, 1948.

These reported losses under fire insurance policies include an allowance for uninsured and unreported losses.

Fire Waste Contest Winners

(*Continued from page* 430)

national organizations. Cities competing in the 1948 contests numbered 742.

Six awards are made annually. The winners in each of the six population classes were given plaques at the annual meeting of the Chamber the first week in May. The winners in the 1948 contest were:

Class 1 (500,000 population and up)—Chicago.

Class 2 (250,000 to 500,000)—Memphis, Tenn. (Grand winner).

Class 3 (100,000 to 250,000)—New Haven, Conn.

Class 4 (50,000 to 100,000)—Decatur, Illinois.

Class 5 (20,000 to 50,000)—Moline, Illinois.

Class 6 (under 20,000)—Fort Collins, Colorado.

Obituaries

J. J. Mulcahey Dies at 91

Ex-Chief James J. Mulcahey died May 22, 1949, at his home in Yonkers, N. Y. "Jim," as he was affectionally known to the fire service from coast to coast, would have been 91 years old next July 2.

Ex-Chief James J. Mulcahey

He was born in Yonkers, July 2, 1858, was educated in the Yonkers public and parochial schools and, with the exception of two years spent in New Rochelle, he lived all his life in that city. He was counted a member of the old volunteer fire department in March, 1876, although not of age. Between that period and 1905 he was honored with every company office and was made

POWHATAN
SENSIBLE-LUG COUPLING

"Equal to any — Better than most!"
DON'T COMPROMISE ON QUALITY — DEPENDABILITY

A snagged hose line can cause serious accidents and can ruin your hose. Experienced fire-fighters appreciate the curved surfaces of the "Sensible-Lug" which enable hose to glide over all obstructions thus protecting life, limb and equipment.

Specify Powhatan Sensible-Lug on your next Hose order.

POWHATAN BRASS & IRON WORKS
RANSON, WEST VIRGINIA
Phones 93 & 94 Charles Town West Virginia - Established 1892

Assistant Chief in 1882. (He was officially "enrolled" in 1880). At that time he was engaged in the hat manufacturing industry.

In 1884, during the depression, Mulcahey took a position with the Metropolitan Telephone Company, now the New York Telephone Company, leaving this connection to return to his former work in 1887. During these years he had charge of the fire alarm system.

In 1902 he was elected Chief of the Volunteer Fire Department, which then consisted of 1,200 men. The Mayor was dissatisfied with conditions and Chief Mulcahey was called on to reorganize the Fire Board. He was appointed to the Board in February, 1906, and served as Commissioner until August of that year. When the office of paid Chief was established he was prevailed upon to accept the job.

Chief Mulcahey joined the International Association of Fire Chiefs in 1901, and in 1920 was elected Secretary of the Association. In 1931 when the positions of Secretary and Treasurer were combined, Chief Mulcahey was elected Secretary-Treasurer, which post he held until 1940 after which he was named Secretary-Treasurer *Emeritus*.

Besides his affiliation with the International, Chief Mulcahey was prominent in New York State and Westchester County fire circles. He was one of the early supporters of the Fire Chiefs' Emergency Plan of Westchester County and later became a member of its Board of Directors. He was also a member of a number of local Yonkers fire organizations.

With the adoption of the Home Rule Bill by Yonkers, Chief Mulcahey was forced to retire because of its age limitations. He continued to manifest his interest in the fire service, however, right up to his death.

Surviving are three sons, Msgr. Robert B. Mulcahey, James and Albert Mulcahey.

Chief August Gerstung Dead

August Gerstung, 84, for thirty-three years chief of the Elizabeth, N. J., Fire Department, died May 9, 1949, in Elizabeth.

He joined the Elizabeth Volunteer Fire Department in 1884, was elected assistant chief in 1891 and chief in 1898, four years before the fire department was taken over by the city, at which time he was retained as its paid head. He retired from active duty in 1931. He was a member of the New Jersey State Fire Chiefs' Association, and an active life member of the International Association of Fire Chiefs.

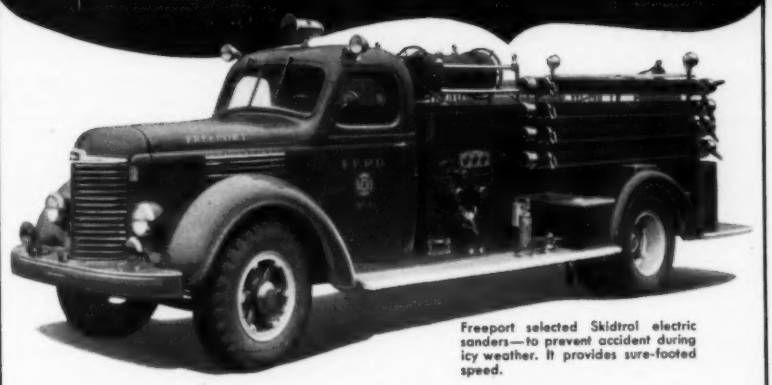
Chief J. H. McNamara Dead

John H. McNamara, 65, Chief of the Danbury, Conn., Fire Department for the past 15 years, died in his home, 45 Fairfield Avenue, on May 3. He had been in failing health for several months.

A native of Newtown, Conn., where he was born, February 14, 1884, Chief McNamara came to Danbury at an early age where, after completing his schooling, learned the hatting trade. He was employed for several years at the Danbury Hat Company.

Later he became associated with the Metropolitan Life Insurance Company

FREEPORT, ILL., SELECTS A NEW BOYER



Freeport selected Skidtrol electric sanders—to prevent accident during icy weather. It provides sure-footed speed.

This Two Stage Boyer-Hale unit is mounted on an International Model KBS7 chassis. It has a rear fill 500 gallon booster tank. Equipment is designed and arranged to handle rural work in addition to its city use. It's an all around fire fighting unit, meeting the requirements of Freeport's needs.

Write, 'phone, or wire

H. O. DeBoer and Associates

NATIONAL SALES OFFICE: LOMBARD, ILLINOIS

BOYER FIRE APPARATUS CO.

TURN YOUR SPARE TIME INTO PROFITS!

SELL *Randolph* FIRE EXTINGUISHERS

$84. A WEEK FROM 2 SALES A DAY!

All Sizes . . . Approved By Underwriters!

Your prospects are *unlimited* . . . every factory, farm, home, garage, laundry, boat and car needs Randolph protection.

Here's the modern extinguisher with a host of fire-fighting features. It's easy to use . . . just one trigger-touch sends snowy CO_2 deep into the fire . . . smothers it in split-seconds. Randolph is non-toxic, no damage to equipment. Does not freeze, deteriorate, or conduct electricity.

Build a successful *part-time* business as a Randolph Dealer. Sell the nationally advertised Randolph Extinguishers used by leading industries everywhere. Write for your full or part-time Dealership Plan *now!* The same plan that is bringing big profits to scores of other firemen. Qualify for an *exclusive* territory by acting . . . TODAY!

RANDOLPH Laboratories, Inc., 19 E. Kinzie St., Chicago, Ill.

PEAK PERFORMANCE

New Central Triple Combination Pumper Equipment on International Standard Commercial Chassis.

CENTRAL

fire fighting equipment is custom built to deliver peak performance for many years in combating all types of fires likely to occur in YOUR area. You are never over-equipped... never under-equipped.

In all price ranges and sizes with your choice of fire fighing equipment on custom-built or commercial chassis. Deliveries now in 30 to 60 days.

NEW FEATURES ...

- High Pressure Fog AND Water through ONE 3-stage Pump.
- Larger Hose Bodies Designed for Quicker Action.
- Closed Type Cooling—Pumps "Balanced" with Motors.
- Fully Approved by National Board of Fire Underwriters.

CENTRAL FIRE TRUCK CORP.

4437 MANCHESTER AVENUE • ST. LOUIS 10, MISSOURI

WRITE FOR FREE CATALOG—TODAY!

FIRE CHIEFS SAY—

"When Fire Starts — Seconds Count"

PROGRESSIVE CHIEFS are now looking to automatic fire detection for the true answer for stopping the increase in fire losses.

ATMO is the famous "Rate of Rise" system that automatically calls the fire department and sounds the alarm within seconds when fire starts.

The ATMO System is approved by

Underwriters' Laboratories, Inc.

Factory Mutual Laboratories, Board of Standards and Appeals, City of New York

ATMO ACTS in SECONDS to STOP FIRE

J. H. SCHARFF, Inc.

36 MAIN STREET, ORANGE, NEW JERSEY

ORANGE 5-6002

and was also affiliated with the John Hancock Life Insurance Company.

Chief McNamara's long career of public service began as a member of the Danbury Common Council in 1924. While an Alderman he was named Chief of the Fire Department in 1934. He first became a member of the Fire Department when he was elected to membership in Wooster Hose Company. He remained active in this organization throughout his life, and for a period of five years during World War I, he served as the company's Captain.

He was one of the early organizers of the Fairfield County Fire Chiefs' Emergency Plan, and also a member of the Connecticut State Firemen's Association, Connecticut Fire Chiefs' Club, New England Association of Fire Chiefs and the International Association of Fire Chiefs. TOM MAGNER

Chief C. W. Brown Dies

Wichita, Kans., Fire Chief C. W. Brown, 52, died on May 1, 1949, ending a 29-year career with the Wichita Fire Department, six years as Chief. Chief Brown was appointed to the department in 1920 at the age of 23. He won his

Chief C. W. Brown

lieutenancy four years later and in 1937 was advanced to captain. Five years later he was made district chief and when Fire Chief Ira Martindale retired in 1943, he was promoted to Chief.

Chief Brown, long active in advanced firemanship and a crusader in the interests of greater fire safety, was active in the International Association of Fire Chiefs and other organizations. He was a past president of the Missouri Valley Association of Fire Chiefs. He was stricken at his home less than 12 hours after city commissioners had approved plans and specifications for the new $48,000 one-story firehouse—one of two planned this year. Also included in the Chief's building program is a department training tower in keeping with his well known insistence on firemanship training. In this respect, Chief Brown had long been actively identified with the Kansas State firemen's training.

His death also cut short a campaign which he was waging for a state law to eliminate fireworks. Late last year he was helpful in setting up the Sedgwick County Fire Department.

His funeral services were attended by

many of his fellow chiefs and firemen, including a delegation of three Kansas City chiefs: John J. Lynch and W. H. Gardner (Kansas City, Mo.) and Olander Lind (Kansas City, Kans.)

Ex-Chief John McCracken Dies

John McCracken who served for twenty-six years on the Gary, Indiana, Fire Department, three years of which as Chief, died on April 30th at the age of 46.

Chief John McCracken

He joined the Gary Fire Department in 1920, became Chief in 1943 and retired in 1946. On August 15 of that year he became a salesman for the American-LaFrance Foamite Corporation.

Surviving are his widow, a son, a daughter, his parents and a sister.

Roswell D. Miller Dies

Roswell D. Miller, 49, died May 9, in Roslyn, L. I., of a heart ailment. He was for years active in the volunteer fire service, having been former president and director of the Firemen's Association of the State of New York; chief of the Roslyn Heights Engine, Hose, Hook & Ladder Company and president of the Nassau County Firemen's Association.

At the time of his death, Mr. Miller was serving his sixth term as a member of the Nassau County Fire Commission. He was also a member of the Fire Advisory Committee of the New York State Division of Safety.

Ex-Chief S. L. Kase Dies

Schuyler L. Kase, former Chief of the Blakely, Pa., Fire Department died on May 23. He had been president of the Northeastern Pennsylvania Volunteer Firemen's Association for the past nineteen years and was very active in fire training activities, having conducted many classes for the Pennsylvania Fire School of the Public Service Institute.

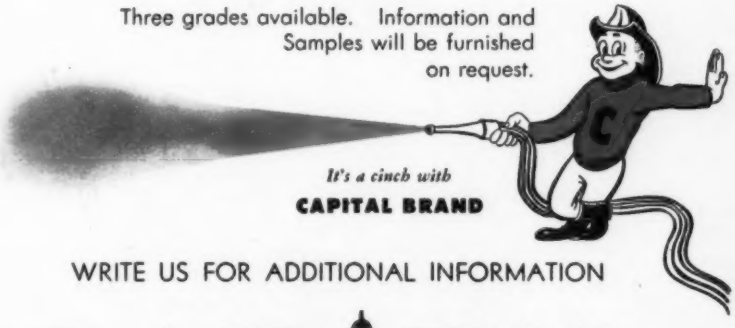
Chief H. J. Jones Dies

Harry J. Jones, 46, Chief of the Monroe, N. C., Fire Department, died of a heart attack on April 26, 1949, at his home in Monroe. Prior to becoming the town's fire chief in 1946, he served in the police department, and as game warden.

SUPER FLEXIBLE
CAPITAL BRAND

50 years of manufacturing experience is your guaranty that this new Super Flexible fire hose is the best obtainable.

Three grades available. Information and Samples will be furnished on request.



It's a cinch with
CAPITAL BRAND

WRITE US FOR ADDITIONAL INFORMATION

CAPITAL
FIRE EQUIPMENT COMPANY
1014-28th St., Box 1775 Sacramento, California

Retired Chief Bourne Dies at Banquet

Retired Fire Chief Edward L. Bourne, 67, of West Bridgewater, Mass., collapsed and died in April at a testimonial dinner given in his honor by the West Bridgewater Fire Department and the Fire Chiefs' Club of Plymouth County in the Town Hall of the community. He collapsed as he was making an acceptance speech, after having been presented a gold badge and a purse of money.

He helped organize the fire department in 1910 and was appointed chief in 1936. He retired from active service in March, 1949.

Present at the testimonial dinner were many officers and members of the Plymouth County Fire Chiefs' Club, New England Fire Chiefs' Club and other fire service organizations.

Salvage Chief Harry Hoffman Dies

Harry Hoffman, Superintendent of the Fire Insurance Patrol of Philadelphia, Pa., died April 15, 1949 after a short illness. He was 73 years of age, and would have had 48 years of service with the Patrol on April 22, 1949.

Superintendent Hoffman was appointed to the Patrol in 1901 and became head of the organization on November 6, 1918 which position he held until his death. (Thanks, H. WESLEY KING and EDWARD H. SPRANGERS.)

W. L. Clairmont Dies

W. L. Clairmont, Dominion of Canada Fire Commissioner since 1939, residing in Ottawa, Ontario, died April 24, 1949. Services were held April 27, in Ottawa.

Deaths

BROOKLYN, N. Y.—James L. King, 65, an expert on fire prevention and consultant with the New York Rating Organization, died May 11 of a heart attack. His entire business career was devoted to fire protection. He was formerly chief inspector of the New York Board of Fire Underwriters and an adviser to the N. Y. City Council on building codes. He was a member of the American Standards Association and was elected vice president of the National Fire Protection Association in 1936.

Persons in the News

J. Rudd Chief at Connersville

Joe Rudd of Indianapolis, former deputy state fire marshal, returned to Connersville, Ind., in April to serve as Chief of the Connersville Fire Department, a position he had held previously. His appointment to the post fills the vacancy made in March by the death of Glen Hahn, chief since the present administration took office in 1948. Since Hahn's death, Calvin C. Porter, a member of the department since 1922, has been acting as chief.—W. B. CARLETON

Miller Heads Nebraska Chiefs

Chief Z. E. Miller of Grand Island, Neb., was elected president of the Nebraska Fire Chiefs' Association at a meeting of the Association in conjunction with the 1949 Nebraska State Fire School in Grand Island. He succeeds E. P. Feaster of Lincoln.

Other officers are R. H. Wolff, Norfolk, vice-president; Russel D. Salak, Schuyler, secretary; H. B. Branting, Stromsburg, and John Hilderbrand, Ogallala, executive committee.

Chief Art Baker Resigns

Arthur J. Baker, since 1918 head of the Lewistown, Mont., Fire Department, and former vice president and president, of the International Association of Fire Chiefs, resigned from his post as Fire Chief in May.

In 1939-40 Chief Baker was president of the Pacific Coast Fire Chiefs Association. He also served as president of the Montana Firemen's Association for ten years.

Following his retirement, a Resolution of Appreciation of his services was adopted unanimously by the Lewistown City Council. Its text is as follows:

"WHEREAS, the resignation of Arthur J. Baker as Chief of the Fire Department of the City of Lewistown, has been presented because of illness and has been accepted with sincere regret by the City Council; and

"WHEREAS, the records show that Arthur J. Baker became a member of the Fire Department of the City of Lewistown in 1904, and thereafter through hard, meritorious work rose

Foreign Division:
212 E. Washington Ave.
Madison 3, Wisconsin, U.S.A.

The well-known 1500 watt "US" Portable Electric Plant is now even better! More compact . . . easier to carry . . . with improved magneto ignition . . . improved design for even greater dependability! Automatic voltage regulation. Positive splash lubrication. No fussing to mix gas and oil. 3.8 HP 4-cycle engine. Only 22 inches high, and weighs just 160 pounds. Other "US" units from ½ to 140 kw. Write for details.

US ELECTRIC PLANTS

UNITED STATES MOTORS CORP.
430 Nebraska Street • Oshkosh, Wisconsin

from the ranks to become the Chief of the Department in 1918 and has filled that high office for over thirty years, not only with great honor and distinction for himself, but with such skill and organization ability as to provide the City of Lewistown with probably the best equipped and most efficient fire department in any city of its size in this country, thus through the years giving the property and the lives of the inhabitants of this city maximum protection; and

"WHEREAS, in addition to becoming one of our most respected citizens and public servants, he has brought high distinction and honor to the City of Lewistown by having his ability and his attainments recognized by the members of National and International organizations of Fire Chiefs when they chose him as an outstanding member of that profession by electing him to the highest office attainable—that of the President of the International Association of Fire Chiefs . . . and

"WHEREAS, it is the desire of the Mayor and the City Council of the City of Lewistown to express their appreciation of the service and accomplishment of Arthur J. Baker as a citizen of Lewistown and as member and Chief of the Lewistown Fire Department, feeling that in so doing they will be expressing the sentiments of all past councils and the people of the City of Lewistown;

"NOW, THEREFORE, BE IT RESOLVED: That as a token and esteem, and in appreciation of the splendid service given by an outstanding public servant, this Resolution be executed in triplicate, one to become a permanent record of this City and the other to be delivered by the Mayor to Arthur J. Baker personally, and that the same be recorded in full in the minutes of this meeting.

"Proposed, passed and unanimously adopted in regular meeting this 2nd day of May, 1949. E. R. Roehl, Mayor."

Chief J. W. Valentine Retires

Fire Chief Joseph W. Valentine, member of the Rock Island, Ill., Fire Department since 1906, and its head since 1944, retired on March 10, last, at the age of 65. He was appointed assistant chief in 1919 and named first assistant in 1925. The retiring chief was paid high honors by the Illinois Firemen's Association, in which he held all offices during his career, the Great Lakes Association of Fire Chiefs of the International Association of Fire Chiefs and the Fire College of the University of Illinois which school he helped found.

Sing Sing Chief Retires

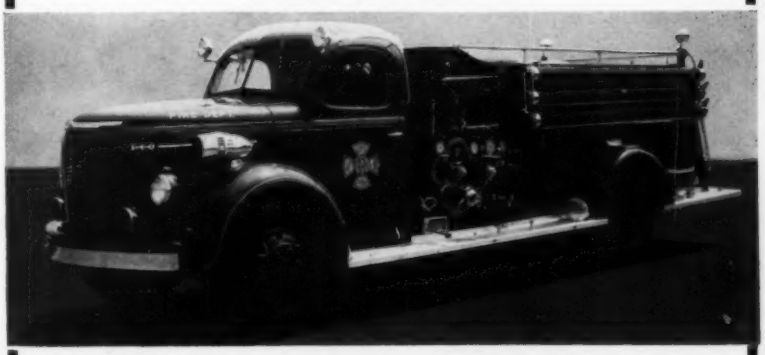
Frank McLoughlin, Fire Chief of the Sing Sing Prison Fire Department (Ossining, N. Y.) for more than 30 years, retired on May 1, 1949.

Although it is not generally known, the famous prison maintains a modern fire department. Most of the firemen are inmates of the institution—some of them serving long-time sentences. It is considered quite an honor to serve on the fire force.

Chief McLoughlin, a resident of Yonkers, N. Y., was formerly Fire Chief of the Ossining Fire Department. He organized the Sing Sing Fire Depart-

YOU SHOULD CONSIDER **OREN** BEFORE YOU BUY

FIRE APPARATUS



NEW, MODERN, THREE-STAGE APPARATUS
AND OTHER POPULAR CAPACITIES AND TYPES
TO EXACTLY FIT YOUR OWN REQUIREMENTS

•

OREN ROANOKE CORP.
ROANOKE 16, VIRGINIA

STANDARDIZE ON "TRUMPET" QUADWAY NOZZLES

Available in all standard sizes, styles and finishes. Shown here is a 2½ inch close up type combination playpipe and nozzle.

Hundreds of departments, from the largest to the smallest, have adopted the Quadway as *the* standard nozzle. A logical policy? Their change-over plan is based on actual service comparisons. They have found more than just a smooth-operating, conventional unit. The Quadway is the one nozzle that gives them every kind of stream they want — on a moment's notice. A solid straight stream, a dense, protective fog-mist, or a combination of both to any variable degree.

We invite you to make the same on-the-job comparisons. Match it with any of your present nozzles under any and all conditions. We think you too will standardize on versatile Quadways.

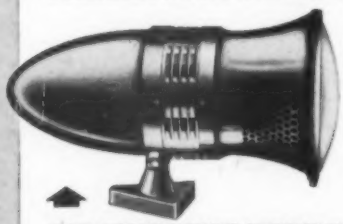
Write Direct or Contact Your Local Wooster Brass Representative.

HOSE BRASS GOODS — WB LINE — THE WOOSTER BRASS CO. WOOSTER, OHIO

THE WOOSTER BRASS CO.
WOOSTER OHIO

STERLING SIRENS

NOT BY CHANCE . . . The Choice of Leading Fire and Police Departments, Hospitals, Manufacturers and Others



STERLING has led the field in new designs and improvements for over 40 years. First to introduce precision manufacturing of siren alarms. Sterling is the oldest and best-known name in warning siren signal equipment.

FOR EMERGENCY VEHICLES
Model 20 SIRENLITE—a powerful siren combined with an automatically flashing red light.

FOR STATIONARY USE
Model M—quick accelerating, powerful, heavy duty public fire alarm. Fully weatherproof, made from the highest grade material.

Complete Line of Siren Equipment Available. Bulletin on Request.

THE STERLING SIREN FIRE ALARM CO., INC.
58 Allen St., Rochester 6, N. Y.

PROTECT LIVES AND PROPERTY WITH *Fire-Resistant*

SAFE T BOWL
BOWLING ALLEY COATINGS

Fire chiefs, engineers and insurance concerns are recognizing ABC's Safe T Bowl coatings as one of the most important contributions to the safety of bowlers in years. Insistence on the use of this new discovery can prevent disaster in your community. Check with local alley operators now before summer refinishing is started. Tested, approved by Underwriters' Laboratories.

AMERICA'S BEST COATINGS, INC.
1632 N. TWELFTH ST., MILWAUKEE, WIS.

Tell us about Safe T Bowl fire-resistant alley coatings

NAME_____

ADDRESS_____ STATE_____

CITY_____

AMERICA'S BEST COATINGS, INC.
1632 No. Twelfth Street Milwaukee, Wisconsin

ment in 1923 and has been its first and only chief.

Chief G. E. Wallace Retires

Fire Chief George E. Wallace terminated his 40 years' service with the Modesto, Cal., Fire Department May 1, 1949—39 of those years as head of the department. Retirement is automatic at 65 under the city's pension plan.

Chief Wallace is widely and popularly known throughout the Coast area for his interest in firemanship.

Chief Fitzpatrick Retires

Jeffrey J. Fitzpatrick, Chief of the Pueblo, Colo., Fire Department since 1942 and a 37-year veteran of the department, retired on pension April 1, 1949.

Chief Fitzpatrick, widely known among mountain states fire service circles, was president of the Colorado State Firemen's Association for three years.

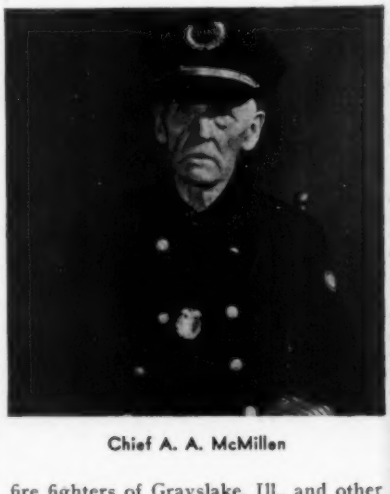
Retirements

CHICAGO, ILL.—Otto Dahl, 61, for the last four years one of two temporary second deputy fire marshals, resigned May 9, 1949, after more than 34 years with the Chicago Fire Department.

Dahl ranked seventh on the test held April 5th for a permanent appointment. John Haberkorn, the other temporary second deputy marshal, ranked first and was appointed in May to replace Michael J. Cody, who had reached compulsory retirement age. One of the other officers who took the test and ranked between Haberkorn and Dahl is John J. McAuliffe, brother of Chief Frank McAuliffe, head of the Chicago Salvage Patrol and former president of the International Association of Fire Chiefs.

"Old Timer" Honored

Fire Chief A. A. McMillen, 82-years "young," was feted May 28th, 1949, at the Annual Convention of the Lake County, Ill., Firemen's Association by



Chief A. A. McMillen

fire fighters of Grayslake, Ill., and other communities in that area. In his honor the occasion was known as "McMillen Day," to celebrate his half-century of service to residents of Grayslake and vicinity.

The popular veteran helped organize the first volunteer fire department of the district in 1899 and was elected "Hook & Ladder Foreman." In 1901 he was elected Fire Chief, which position he still holds.

"Mac," as he is affectionately known to his friends, has seen the department grow from bucket brigade to hand pumpers and hand drawn hose carts and to motorized pumpers. He was mayor of the town for 14 years, village marshal under six mayors and deputy county sheriff under four sheriffs. He is a member of the International Association of Fire Chiefs.

Chief's Daughter to Wed Flame

Fire Chief Alfred H. Koltonski who rounds out 25 years with the Rutland, Vt., Fire Department in October, is popular throughout the nation's fire service not only in his own right, but as the father of Fire Chief Patricia Ann Koltonski. And that "female fire chief" isn't just a lot of smoke. Patricia Ann comes by it naturally, as chief of the school fire department at Emerson College, Boston, Mass.

For three years "Pat" has guarded the three girls' dormitories at Emerson. She set up a system of monthly fire drills which aren't always too popular because she usually holds them sometime between 11:00 P. M. and 2:00 A. M. But officials of the Boston Fire Department have praised Pat for her work.

The Chief takes her work seriously. She did demur when it was suggested she apply for active membership in the New England Association of Fire Chiefs, with its 1,084 male members, but the veteran smoke eaters took one look at Pat and she was in unanimously!

Now the Distaff Chief has found a new "flame"—that wouldn't go out. There's nothing "alarming" about it—it was bound to happen! The best of chiefs have to face conflagrations! In this case the "mutual aid call" will read something like this: *"You are invited to the wedding of Patricia Anne Koltonski and U. S. Navy Lt. (jg) Harvey Lyon of Denver—September,* 1949."

Chicago Busy in 1948

The Chicago Fire Department averaged 191 alarms per day for all types during the year 1948 and the first four months of 1949 according to statistics released to FIRE ENGINEERING by the Bureau of Fire Alarm Telegraph in May of this year.

In 1948 the Bureau handled a total of 44,046 fire alarms as follows: Still alarms, 41,159; boxes, 2,167; 2-11, 132; 3-11, 52; 4-11, 24; 5-11, 18; special calls, 5; patrol stills, 489.

Special duties totalled 26,399 as follows: Ambulances, 5,470; squads, 14,000; battalion chiefs, 2,869; engine companies, 2,274; hook and ladder companies, 1,063; miscellaneous, 331; Insurance Patrols, 394.

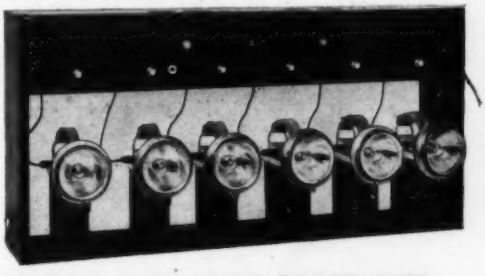
Fire alarms during the first four months of 1949 were 14,663 as follows: Still alarms, 13,690; boxes, 700; 2-11, 68; 3-11, 22; 4-11, 9; 5-11, 5; special calls, 2; Insurance Patrol stills, 167.

Special duties totalled 10,060 for the first four months of 1949, as follows: Ambulances, 2,271; squads, 5,226; battalion chiefs, 920; engine companies, 1,001; hook and ladder companies, 369; miscellaneous, 137.

WHEAT *FIREMAN'S* SPOTLIGHT

½ MILE BEAM—25,000 CANDLEPOWER—1,000 HOURS OPERATION
— all at LOWER COST

This Model 584 Six Lamp Charging Rack is recommended for installations of 3 or more lights. It is designed for Standard 115-Volt, 60-Cycle Alternating Current. Individual pilot lamp at each charging station indicates when battery is on charge.



FEATURES OF WHEAT FIREMAN'S SPOTLIGHT

- ALL PARTS ARE HIGH LUSTRE CHROME.
- FIREMAN'S RED BATTERY CASING 15 TIMES STRONGER THAN BEST HARD RUBBER.
- BUILT-IN WINDOWS SHOW SOLUTION LEVEL.
- WATERPROOF SWITCH — PROTECTIVE LENS GUARD.
- DESIGNED TO EASILY DETERMINE STATE OF CHARGE.
- MORE ECONOMICAL THAN DRY CELLS.
- CARRIES FACTORY MUTUAL APPROVAL.

Individual Chargers and larger Racks available to meet specific requirements.
For further information
CONSULT YOUR DEALER or write
KOEHLER MFG. CO., MARLBORO, MASS., U.S.A.
Also Manufacturers of WHEAT *FIREMAN'S* BELT LAMP

The NEW Three Stage DARLEY Champion Pump

500 or 600 or 750 Gallon Underwriter Performance PLUS 60 Gallons per Minute at 850 Lbs. For High Pressure Fog

NEW 44 PAGE BOOKLET of FIRE APPARATUS & FIRE PUMPS

Write Today For Your Copy

W. S. DARLEY & CO., CHICAGO 12

BRAXMAR BADGES

Standard since 1879

THE BEST BADGE MONEY CAN BUY

STANDARD WITH FIREMEN EVERYWHERE. SUPPLIED IN NICKEL, CHROME, GOLD PLATE AND ROLLED GOLD.

If you have not yet received our latest circular, we'll be glad to mail one on request.

BRAXMAR BADGES

JOHN O. VEIT
President

C. G. BRAXMAR CO., Inc.
216 E. 45th Street, New York 17, N. Y.

Annual Reports Received

Lansing Alarms Up—Losses Down

The annual operating report of the Lansing, Mich., Fire Department, Hugh F. Fisher Chief, for the year 1948, shows a record number of alarms—2,098 for the year—with losses of $156,399.47, which is over $6,000 below losses in 1947. During the year the department started its new central station and garage, to cost $600,000 when completed, and began a $32,500 addition to its Fire Alarm building. Recommendations for the year 1949 include one 1,000 G.P.M. pumper, two chiefs' cars and miscellaneous hose and other facilities.

A feature of Chief Fisher's report is the method of recording the hours of training received by each fireman and each company in the department.

* * *

Atlantic City Losses $446,287.13 in 1948

The report of the Atlantic City Fire Department, Chief Rudolph J. F. Farley, is brief but packed with statistics. Comparative operations and losses are not shown, but the report lists 719 alarms, of which 564 were for fires and 155 false or unnecessary. In Atlantic City, the report discloses, Saturday proved the busiest day of the week for the fire department.

* * *

Wichita Losses Drop

Fire losses for the City of Wichita, Kans., in 1948 were $260,735.00, a decrease of $157,200 over the 1947 figure, it is disclosed by the Report of the Fire Department.

A feature of this excellent report is the organization chart of the department, and the interesting manner in which the statistical data are presented.

The work of the department is performed by eight divisions: Electrical work; Equipment repair; Fire Inspection service; Fire alarm system; Maintenance shop; training school and Secretary (accounting and records).

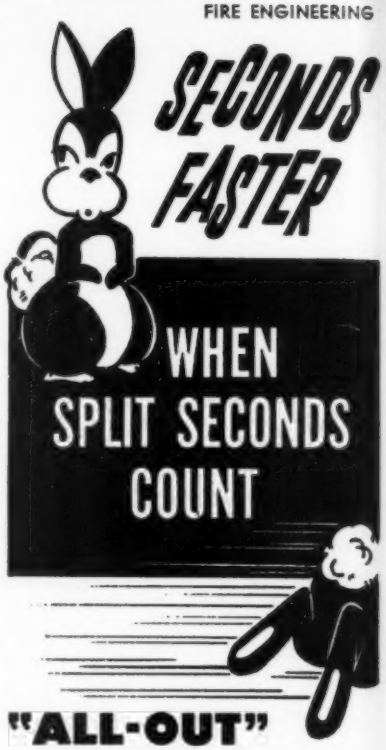
During the year the department added five FM two-way mobile radio units and one main station and installed three AM transmitters and receivers in fire apparatus. The program of improvements includes construction of a new fire station near 17th and Grove streets; one in the vicinity of Martinson and Douglas; relocation of the drill tower and the addition of a 750 GPM pumper and a ladder truck, together with a new passenger car.

* * *

Blackwell Department Wins Honors

For the second time in two years, the Blackwell, Oklahoma, Fire Department, placed second in the national Fire Prevention Week contest. A reading of the department's report (Chief George Ed Gebelein) for the year, gives some of the reasons why.

Chief Gebelein's report is presented in diary form, listing chronologically the activities of the department to prevent, as well as to extinguish, fires. Fires for last year numbered 168 against 183 for the year previous. Losses were $5,560. The department traveled 160 miles responding to alarms.



"ALL-OUT"
DRY CHEMICAL FIRE EXTINGUISHER

EASIER TO HANDLE — lighter in weight by 7 to 15 lbs.

FASTER IN ACTION — 10′ x 10′ pit of blazing gas and oil *all out* in seconds.

PENETRATES CREVICES—completely blankets wide area.

ELIMINATES RE-IGNITION—works in winds and drafts.

NON-TOXIC, NON-CORROSIVE — harmless to everything but fire—including food.

SAFE ON ELECTRICAL FIRES—non-conductive.

FAN SHAPED NOZZLE — ejects flat stream; screens off flame from burning material; safeguards operator.

Only "ALL-OUT" gives *all out* protection. Demonstration anywhere, anytime. Write today for illustrated data.
Model A-16 illustrated, has 15 lb. capacity Model B-10 contains 10 lbs of dry chemical.

Protects the operator as it kills the fire.

Distributors' inquiries invited.

ALL-OUT MFG. CORP.
2 PARK AVENUE, NEW YORK 16, N. Y.

Chattanooga Report Stresses Sprinklers

A highlight of the Annual Report of the Chattanooga, Tenn., Fire Department's Fire Prevention Bureau, Michael J. Quinn, Chief of Bureau, shows thirteen hotels and one sanatarium were fully or partially sprinklered during the year. Four other occupancies also were so covered. In addition contracts were let for nine other hotels and miscellaneous structures.

During the year the department received a total of 1834 alarms compared with 2218 in 1947. This is one of the few annual departmental reports which does not include monetary fire loss statistics.

* * *

Report of the 43rd Convention, Louisiana State Firemen's Association

The Year-Book of the 43rd Annual Convention of the Louisiana State Firemen's Association held at Lafayette, La., Sept. 27-29, 1948, covers 142 pages, most of it relating to the history and accomplishments of the State's "smoke-eaters." Chief Louis Kihneman of Morgan City, heads the organization, which includes representatives from nearly all of the 129 communities in the state.

* * *

389 Rochester Firemen Hurt in 1948

Over the past year, 389 members of the Rochester Fire Department were injured, 45 seriously, in line of duty, Fire Chief John A. Slattery said in his annual report on the fire department to Public Safety Commissioner Thomas C. Woods.

Injuries were incurred in fighting 2,396 fires within the city and 24 outside its borders. Fire alarms, the report discloses, totaled 3,450, or 352 more than in 1947. Chief Slattery paid special praise to the "Protective" a volunteer salvage group which answered 311 alarms, worked at 191 fires or other emergencies and spread 739 tarpaulins.

* * *

San Antonio's Fire Fighter's Academy

The report on the Fire Fighter's Academy of San Antonio, Texas, outlines the purpose of the school (in brief to provide thorough and proper training for all City Firemen) and gives details of the conferences held during the year.

Twenty-three members of the department graduated in the Apprentice Class; in-service training was held in engine companies Apr. 1 to May 31, 1948; American Red Cross refresher courses, June 21 to Dec. 31; Officer's Conference on Building and Inspection Written Reports, July 6 to Aug. 4; Special refresher drills in all engine companies (except Nos. 22 and 23); Fire Service tests conducted for all Fire Department pumps; Drill Tower evolutions, all engine companies except 22 and 23, Sept. 1 to Nov. 12; ladder evolutions, all ladder companies, Nov. 15 to Dec. 24.

* * *

$2,520,643 Losses in Nova Scotia in 1948

The annual fire loss report of the Province of Nova Scotia for the year 1948 shows 1,219 fires with total losses of $2,520,643. In 106 fire "incidents" 56 persons were killed by fire and 101 injured. Of the injured, 20 were firemen.

ROCKER LUG TYPE COUPLING

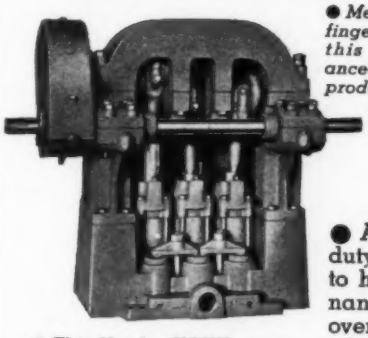
Check these Elkhart features: 1. Higbee Thread Indicator on Lugs. 2. Higbee Non-Cross Threads. 3. Free Swiveling. 4. Durable Heavy Bronze Construction.

PLATE R-329

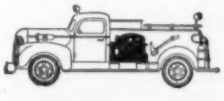
Write Today

FIRE FIGHTING EQUIPMENT
ELKHART
BRASS MANUFACTURING CO.
ELKHART . . . . . INDIANA

HARDIE FOG GUN



● *This Hardie XCXX pump delivers 35 G.P.M. at 800 P.S.I. at 118 R.P.M. Hardie LCXA pump gives you 60 G.P.M. at 800 P.S.I.*



● *Mere pressure of the fingers on the grip of this splendidly balanced Hardie Fog Gun produces exactly the fog or stream you want.*

● Absolute dependability under severest duty; quick adjustment from fog, to spray, to hard, smashing solid stream; maintenance and upkeep practically nothing even over years of use—these are what you get when you specify Hardie High Pressure Pumps and Guns for Fog Fire Fighters. Available from leading equipment manufacturers. Write for specification data.

THE HARDIE MFG. COMPANY
Hudson, Mich.
Los Angeles 11, Calif. Portland 9, Oregon
Export Dept.—Detroit 26. Canadian Office—Clarence W. Lewis & Son Ltd.—Grimsby, Ont.

★ H ★ A ★ R ★ D ★ I ★ E
High Pressure PUMPS AND FOG GUNS
for Fog Fire Fighters

NO UNSEEN HAZARDS

That's why firefighters prefer

ACME
Full-Vision
FD Gas Masks

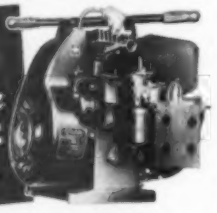
Only the Acme gas mask gives you full, unobstructed vision —up, down and to either side. This means greater protection because you can see as well as without a mask. Acme FD canisters protect against smokes, mists, fumes, dusts and gases. Specify Acme—seeing is believing.

Free Bulletins on Request

ACME
PROTECTION EQUIPMENT CO.
3037 West Lake St., Chicago 12, Illinois

Floodlighting
WHERE YOU NEED IT!

ONAN *Portable* **ELECTRIC PLANTS**



EASILY CARRIED
Lightweight and compact, Onan Electric Plants can be hurried to the spot where needed. Supply current for floodlights, electric saws, drills and other tools. Always ready for instant use.

FIT INTO SMALL SPACE
Compact, self-contained Onan Electric plants can be ordered as standard equipment with many makes of new fire trucks. Just a few square inches of mounting space required for installation on old trucks.

Write for **FREE** *Folder!*

New folder shows many lightweight models for fire department use. D.C., 1200 to 5,000 watts. A.C., 350 to 3,000 watts. Large plants for emergency operation of signal systems to 35,000 watts.

Onan **D. W. ONAN & SONS INC.**
4546 Royalston Ave., Minneapolis 5, Minn.

Detroit Fire Prevention Div. Reports

The Fire Prevention Division of the Detroit Fire Department, Edward W. Hall, Fire Marshal, reports that the department responded to 19,096 alarms in 1948—an increase of 3,160 over 1947. Of the total, 1,997 were false alarms, 3,349 needless alarms and 2 alarms for fires outside the city. Fire losses for the year were $8,709,085—an increase of 37% over 1947. Fifty-four persons lost their lives as a result of fire, and 200 were injured.

The report stresses the inspection and other fire prevention work of the department and the educational and public relations efforts to put over fire prevention not merely in a "campaign" but as a regular year-round program.

* * *

Philadelphia Fire Report Covers 1947-48

The comparative report of the Bureau of Fire of Philadelphia, John C. Cost, Chief Engineer, gives interesting comparative data on fire losses and fire department operations for 1947 and 1948.

Philadelphia at present has 72 engine companies; 29 ladder companies; 5 pipe line (h.p. companies); 3 fire boats; 3 rescue squads; 3 water tower companies (h.p.), 1 emergency crew. Personnel includes 1 chief engineer; 6 deputy chief engineers; 34 battalion chiefs; 1 principal clerk; 3 clerks; 1 secretary-stenographer; 1 captain of fire school; 115 captains; 230 lieutenants; 27 fire boat firemen; 11 marine engineers; 11 marine pilots and 2,803 hosemen and laddermen.

In 1948 the Bureau responded to 14,885 alarms, an increase of 612 over 1947. Insured and uninsured losses in 1948 were $7,270,495.

* * *

Fire Business Up in Akron

The Annual Report of the Akron, O., Fire Department, Chief F. C. Vernotzy, for the year 1948, shows 237 more alarms than the year preceding, with an increase in fire loss of $112,325, or per capita loss of $2.87 in 1948 against $2.44 in 1947.

The Report, which is a mine of statistical information, includes details of the department's fire prevention and training operations. A notable improvement made in the department is the installation of two-way radio equipment on all Akron fire Department apparatus except Ladder 1.

* * *

Atlanta Alarms and Losses Drop

The 67th Annual Report of the Atlanta, Ga., Fire Department, Chief C. C. Stryon, discloses that during 1948 the department responded to 4,844 runs, a decrease of 392 compared with 1947. The total fire loss sustained was $487,133, a drop of $283,663 from the previous year.

The Report, which is in printed form, 56 pages and cover, includes statistical information on the fire loss, cost of operating and maintaining the department; the 'business' done by each company; activities of fire fighting force, Bureau of Fire Prevention, Signal Department, Training School, Repair Shop, and concludes with a complete history of the Atlanta Fire Department, with mention of previous large fires.

Chief Styron recommends addition of two 1,000 GPM pumpers, a heavy chassis for the water tower, three complete assemblies, one 2½-ton chassis for

CIRCUL-AIR
FIRE HOSE DRYER

- Dries hose in a few hours.
- Saves space — fits in any corner.
- Keeps all hose ready for service.
- Makes good hose last longer.
- Reduces new building costs.
- Improves station design.
- Dries fire clothing, too.

WRITE FOR FREE BOOKLET

THE CIRCUL-AIR CORPORATION
575 East Milwaukee St.
DETROIT 2 MICHIGAN

BAR-WAY
HOSE COUPLINGS
U. S. PATENT 2367447
for
HIGH PRESSURE
FOG *lines*
Approved By
UNDERWRITERS LABORATORIES

Streamlined
Full Flow
High Pressure
Accurately Machined
Internal Expansion
Remountable

"ON THE ENDS—IN THE END
IT'S BAR-WAYS

BAR-WAY MFG. CO.
STAMFORD • CONNECTICUT

No. 5 Ladder, one assistant chief's car, one 1½-ton pick-up truck and various other minor equipment. The city is constructing a new fire headquarters building at the corner of Gilmer and Courland Streets, which will also house the signal system.

* * *

Lewistown Answers Many Out-of-Town Calls

Of 125 total fire alarms responded to by the Lewistown, Pa., Fire Department in 1948, 45 were out-of-town calls. Fire losses for the year were $67,947, a per capita loss of $4.85. A. N. Yearick is Chief of the Lewistown Fire Department, which includes Henderson, Fame, Brooklyn and City Ladder Companies. Lewistown is the site of the 1949 Pennsylvania Fire School.

New England Chiefs Meet June 21-23

The twenty-seventh annual conference of the New England Association of Fire Chiefs is to be held at Wentworth-by-the-Sea, Portsmouth, N. H., on June 21, 22 and 23.

Secretary-Treasurer John W. O'Hearn has issued a program which shows an outstanding array of timely topics. The technical program is as follows:

TUESDAY AFTERNOON, 2:00 P.M.
ROUND TABLE DISCUSSION

Conducted by Roi B. Woolley, Asst. Editorial Director, "Fire Engineering"

SUGGESTED TOPICS

Hazards of Plastic Lighting Ornaments
Hazards of Television Reception Equipment
What Can Be Done to Improve Water Supplies?
Advantages of Small Hose
Hazards of Fluorescent Lighting Tubes
Other Topics From Floor
Topic: "Should Fire Insurance Companies Organize a General Inspection Bureau?" Kenneth H. Erskine, Local Mgr. Liverpool & London & Globe Insurance Co., Boston Office, Presiding.
Topic: "What More Can Be Done to Prevent Fires In Hotels, Hospitals, etc." Former Chief, Samuel J. Pope, Presiding.

TUESDAY EVENING, 7:30 P.M.
ROUND TABLE DISCUSSION

Topic: "What Has Been Done to Reduce The Threat of Devastating Forest Fires in New England?"
Conducted by A. C. Hudson, Secretary New Hampshire Board of Underwriters.
Topic: "Relation of The State Fire Marshal to the Fire Chief."
Conducted by Fire Marshal Everett I. Flanders, Commonwealth of Massachusetts.
Response by every New England State Fire Marshal.
Address: Lieut. Col. David B. Parker, Army Gen. Staff, Washington, D. C., "Atomic Warfare" (With Pictures).

WEDNESDAY MORNING,
JUNE 22, 9:30 A.M.

Address: Chief Andrew T. Callahan, Harrison, N. J., Past President, International Association, "What Can Be Done to Provide Greater Safety in Our Schools?"
Address: Mr. Percy Bugbee, General Manager, National Fire Protection Association. "Forward Progress and What The Fire Service May Expect As a Result of The National Fire Prevention Association 53rd Annual Meeting, May 16-19, 1949."
Address: F. B. Philbrick, President and General Manager, Gamewell Fire Alarm Co. "New Improvements in Fire Alarm Transmission Equipment."
Address: Chief Henry G. Thomas, Hartford, Conn. "Techniques for Forcible Entry in Modern Construction, Tempered Plate Glass, Glass Blocks, etc."

For *Volume* and *Pressure*

Specify HALE

Every month in FIRE ENGINEERING you see the evidence in pictures—the evidence that VOLUME *and* PRESSURE are both vital in controlling or stopping disastrous fires.

Firefighters who have used Hale FIRE Pumps *know* they can depend on a HALE for the right volume and the right pressure to fit a wide range of tough fire-fighting conditions.

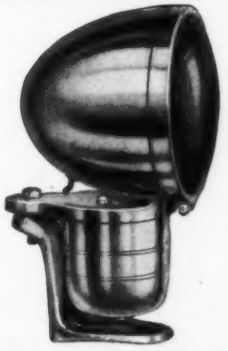
In other words, they have learned through first-hand experience to appreciate a Hale's flexible range of performance and high efficiency.

Make sure of dependable *Volume* and *Pressure* in your next piece of apparatus by insisting on a Hale Fire Pump.

Write today for the recent bulletins on HALE FIRE PUMPS; they are built in all standard capacities.

HALE FIRE PUMP COMPANY
CONSHOHOCKEN, PA.

PROTECT
YOUR EQUIPMENT AND PERSONNEL



Flash 'N Wag

Flashing, oscillating WIG-WAG Redhead beam quickly clears the driver's side of the road as well as warning those approaching. Sends powerful signals 1,000 feet ahead. Visible for miles.
Safer, faster, quieter runs. 6" and 8" diameter sizes. Write for Folder.

CARPENTER MFG. CO.
200 Master-Light Bldg.
BOSTON-45-SOMERVILLE
MASSACHUSETTS

FIREMEN'S UNIFORMS

BADGES
CAPS
INSIGNIA

It is easy to order your uniforms by mail.

We supply an illustrated measurement form with simple instructions that show you how to take perfect measurements.

Write today for catalog No. G-60, samples of materials, price list and measurement form.

We also manufacture police uniforms. Write for police department catalog No. G-56.

RUSSELL UNIFORM CO.
1600 Broadway, New York 19, N. Y.

BODY-GUARD
BUNKER SUITS
FOR COMFORT & PROTECTION

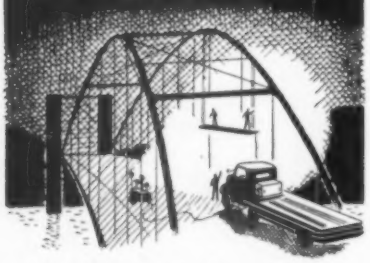
WE ARE DISTRIBUTORS FOR
SIREN BOOTS

We have been supplying **FIREMEN'S CLOTHING** for over 25 years.

Any fireman can have a catalog by writing—

BODY-GUARD MANUFACTURING CO.
ST. JOSEPH - - MISSOURI

Have Power Where You Need It!



Fairbanks-Morse generating sets enable you to have power, light and heat where you need it. These popular units are widely used on construction jobs, farm field operations, in logging camps; for roadside restaurants, stores, and used car lots; to illuminate baseball and football fields; for resorts and private homes. Fairbanks-Morse generating sets are available in capacities from 350 to 35,000 watts. For complete details, see your nearest Fairbanks-Morse dealer or mail the coupon today.

FAIRBANKS-MORSE
600 S. Michigan Ave. S8-6
Chicago 5, Illinois

Gentlemen: Please send full information about Fairbanks-Morse generating sets.

Name.....
Address.....RD.....
City.....State.....

Convention Dates

June 21-23—NEW ENGLAND ASSOCIATION OF FIRE CHIEFS. Annual meeting, Wentworth Hotel, Portsmouth, N. H. Secretary, John W. O'Hearn, 22 Mount Auburn Street, Watertown, Mass.

June 22-24—MARYLAND STATE FIREMEN'S ASSOCIATION. Annual meeting, Ocean City, Md. Secretary, B. R. Benson, III, 303 Bosley Avenue, Towson 4, Md.

June 23-25—MISSOURI VALLEY ASSOCIATION OF FIRE CHIEFS. Annual meeting, Fort Collins, Col. Secretary, Chief Ray Tiller, Fire Headquarters, Waterloo, Ia.

June 23-25—WYOMING STATE FIREMEN'S ASSOCIATION. Annual meeting, Torrington, Wyoming. For information contact R. D. Flynn, Secretary, Torrington Fire Department.

June 25-26—NORTHEASTERN PENNSYLVANIA VOLUNTEER FIREMEN'S FEDERATION. First regional fire school, Hanover Township, Luzerne County, Pa. Secretary Harry Armstrong, 115 Storrs Street, Taylor, Pa.

July 14-16—MONTANA STATE FIREMEN'S ASSOCIATION. Annual meeting, Butte, Mont. Secretary-Treasurer, Al LaForest, Butte, Mont.

July 19-21—CENTRAL NEW YORK FIREMEN'S ASSOCIATION. Annual meeting, Penn Yan, N. Y. For information, contact Penn Yan Fire Department.

July 20-22—MICHIGAN STATE FIRE CHIEFS ASSOCIATION. Annual meeting, Cadillac, Mich. Secretary, Chief Orie A. Hand, Fire Headquarters, Lincoln Park 25, Mich.

July 21-23—ASSOCIATION FOR FORMER U. S. NAVY, COAST GUARD AND MARINE CORPS FIRE FIGHTERS. Annual meeting, Franklin Legion Hall, High Street, Columbus, Ohio. Secretary-Treasurer, William J. Mignery, R. No. 5, Elkhart, Ind.

July 25—EGYPTIAN FIRE FIGHTERS ASSOCIATION. Regular meting, Salem, Ill. Secretary, Victor L. Stocks, Centerville, Ill.

July 25-27—WISCONSIN STATE FIRE CHIEFS' ASSOCIATION. Annual meeting, Jefferson, Wis. Secretary, Chief Leo J. Girens, Fire Headquarters, Oshkosh, Wis.

July 25-28—WEST VIRGINIA FIRE SCHOOL. Annual meeting, West Virginia University, Morgantown, W. Va. Director R. E. Hanna, Jr., Fire Service Extension Schools, School of Mines, West Virginia University, Morgantown, W. Va.

Aug. 1-2—WISCONSIN PAID FIREMEN'S ASSOCIATION. Annual meeting, Kenosha, Wis. Secretary, John Kromel, 717 56th Street, Kenosha, Wis.

Aug. 3—NEBRASKA STATE ASSOCIATION OF FIRE FIGHTERS. Annual meeting, Lincoln, Neb. Secretary-Treasurer, Warren F. Kensinger, 302 South Pine, Grand Island, Neb.

Aug. 8-12—PENNSYLVANIA FIRE SCHOOL. Annual meeting, Lewiston, Pa. Director, Edgar A. Spotz, Department of Public Instruction, Harrisburg, Pa.

Aug. 12-13—VERMONT FIREMEN'S ASSOCIATION. Annual meeting, Windsor, Vt. For information, contact Acting Chief Richard C. Holmes, Windsor, Vt., Fire Department.

Aug. 16-17—NEW YORK STATE FIREMEN'S ASSOCIATION. Annual meeting, Albany, N. Y.

Aug. 17-19—INDIANA FIREMEN'S ASSOCIATION. Annual meeting, Lafayette, Ind. Secretary, Dee L. Corbin, P. O. Box 95, Bedford, Ind.

Aug. 19-20—CONNECTICUT STATE FIREMEN'S ASSOCIATION. Annual meeting and field day, West Haven, Conn. Publicity Chairman, V. W. Lee, P. O. Box 204, West Haven 16, Conn.

Aug. 20—BALTIMORE COUNTY VOLUNTEER FIREMEN'S ASSOCIATION. Annual meeting, Maryland Line, Md. Secretary, W. A. Chenoweth, 4104 Milford Mill Road, Pikesville 8, Md.

Aug. 29-Sept. 1—DOMINION ASSOCIATION OF FIRE CHIEFS. Annual meeting, Ottawa, Ont. Secretary, Chief Allan H. Clark, Fire Headquarters, Lakefield, Ont.

Sept. 6-8—KENTUCKY FIREMEN'S ASSOCIATION. Annual meeting. Covington, Ky. Secretary, Captain V. A. Beam, 818 Sutcliff Avenue, Louisville, Ky.

Sept. 8-10—OHIO STATE FIRE CHIEFS ASSOCIATION. Annual meeting, Dayton, Ohio. Secretary, Assistant Chief Rosche, c/o Fire Department, Canton, Ohio.

Sept. 9-11—COLORADO STATE FIREMEN'S ASSOCIATION. Annual convention, tournament and fire school. Colorado Springs, Colo. Secretary, Arthur J. Becker, 4250 Stuart Street, Denver 12, Colo.

Sept. 12-16—VIRGINIA FIRE SCHOOL. Annual meeting, Roancke, Va. Out of state visitors welcome. For information contact Clay A. Easterly, Director, 902 Travelers Building, Richmond 19, Va.

Night Emblem Light

For Officers and Members of all Fire Departments

N. Y. State recently passed a law permitting officers and members of all fire departments to carry an Emblem Light on their cars.

This distinguished lifetime unit is instantly recognized in traffic and avoids delays in responding to calls. Complete and ready to attach. Please specify whether red or blue lens is wanted.

Write for Free Catalog, Dept. F-E

FYR-FYTER PRODUCTS
19 Beekman St. New York

WENTWORTH
HEAD-MASTER
REG. U.S. PAT. OFF.
FIREMAN UNIFORM CAPS

Union Made **Prompt Delivery**

Wentworth Fireman Caps are made of the Highest Quality Standard Materials available. They are made in all the New and Standard styles by the Best Skilled Union Craftsmen. Over 50 years of experience and skilled workmanship guarantees you AMERICA'S GREATEST CAP VALUE in all WENTWORTH FIREMAN CAPS.

Write direct for latest circular and prices or see your local dealer.

AMERICA'S UNIFORM CAP HEADQUARTERS

WENTWORTH-FORMAN CO. INC.
MANUFACTURERS
21-25 EDINBORO ST. BOSTON, MASS.

INVINCIBLE
NOZZLES

with HOSE MANIFOLD

•

Just another type —one of many— made by pioneers in nozzle manufacture.

•

"All American Choice"

•

Seldom the lowest priced but always the best.

•

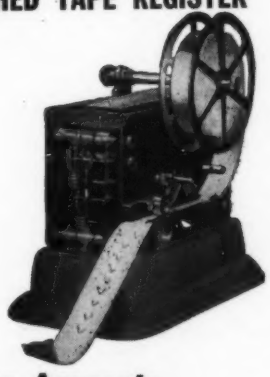
F. N. McINTIRE BRASS WORKS

Successors to A. J. Morse & Son, Inc.

Boston, Mass.

1837 — 1949

HARRINGTON PR-10
PUNCHED TAPE REGISTER



For Accurate Fire Alarm Records

This punched tape register automatically records fire alarms or other emergency signals as they are transmitted through central fire alarm stations, outlying fire stations, police department offices, water works, etc., circuits.

HARRINGTON SIGNAL COMPANY

MOLINE - - - ILLINOIS

In Canada:
C. E. Hickey & Sons, Ltd., Hamilton, Ont.

Convention Dates

Sept. 20-21—IOWA STATE FIREMEN'S ASSOCIATION. Annual meeting and tournament, Spencer, Ia. Secretary, C. H. Fuchs, 2749 Kinsey Avenue, Des Moines, Ia.

Sept. 21—FIRE CHIEF'S EMERGENCY PLAN OF WESTCHESTER COUNTY. Monthly meeting, Pleasantville, N. Y. Secretary, Howard Geer, Rye, N. Y.

Sept. 26-29—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. Annual meeting, New Orleans, La. Secretary-Treasurer, Daniel B. Tierney, 8 Robbins Road, Arlington 74, Mass.

Oct. 4-6—FIREMEN'S ASSOCIATION OF THE STATE OF PENNSYLVANIA. Annual meeting, Greensburg, Pa. Secretary, Charles E. Clark, Box 271, Wayne, Pa.

Oct. 10-13—INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION. Annual meeting, Pittsburgh, Pa. Secretary, Irvin Shulsinger, International Municipal Signal Association, 11 West 42nd Street, New York 18, N. Y.

Oct. 17-19—NEBRASKA STATE VOLUNTEER FIREMEN'S ASSOCIATION. Sixty-seventh annual meeting, Grand Island, Neb. Secretary, Russell D. Salak, Schuyler, Neb.

Oct. 24-28—NATIONAL SAFETY CONGRESS. Annual meeting and exposition, Chicago, Ill. General secretary, R. L. Forney, National Safety Council, 20 N. Wacker Drive, Chicago 6, Ill.

News of the Manufacturers

(*Continued from page* 434)

Both of these B-K Oxygen outfits have the acceptance of the American Medical Association, and their special modern features are described in an illustrated bulletin, "The Oxygen Drinking Fountain." It may be had by addressing Bishinger-Koehler Mfg. Company, Inc., 7838-42 Kelly Street, Pittsburgh 21,, Pa.

Fenwal Appoints Carlson

Norman E. Carlson, formerly with Factory Mutual Laboratories, has joined the Sales Department of Fenwal Incorporated, Ashland, Massachusetts, makers of Fenwal Detect-A-Fire fire detectors.

Mr. Carlson holds the degree of Chemical Engineer from Tufts College Engineering School. He was a Resident Inspector and Engineer with Factory Mutual Laboratories for 12 years, in which position he carried out plant inspections and made safety recommendations for fire prevention. During the war he was a Naval Damage Control Officer.

In his new position, Mr. Carlson will direct the sale of the Fenwal Detect-A-Fire and act as consultant to Fenwal salesmen and customers.

Harry Harding — Super "Spark"

Press agented as "America's greatest 'spark,'" Harry J. Harding, 50-year-old Lynn, Mass., lumber yard owner, appears to rate the title. His big Revere, Mass., home is loaded with more bells, gongs, radios, registers, sliding poles and whathaveyou than most fire stations. His automobile is also unique. It contains four separate radio systems; a standard broadcast radio; a short wave receiver tuned to five wave lengths of cities and towns in Metropolitan Boston; a two-way radio for direct contact with Boston fire alarm headquarters and a two-way radiotelephone.

But that isn't all: Harding's home and garage are equipped with more fire gadgets than will be encountered in the most rabid fire buff or spark's hangout. In Harding's habitat, a normal "tape"

New Model 5-A
PACIFIC PUMPER

Weighs only 38 lbs.

Newest, most compact model in the famous line of Pacific portable pumpers, proved in years of use by public and private forest fire protection agencies.

Power plus portability! The new light weight Model 5-A is easily transportable on foot, by truck or by air. Offered with choice of two pumps for volume up to 32 g. p. m. or for pressure up to 275 p. s. i.

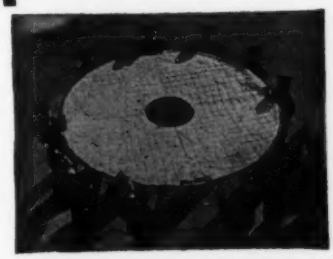
WRITE FOR *illustrated, Model 5-A specification sheet, or suggestions on applying portable pumpers to your fire problem.*

PACIFIC *Marine Supply Co.*
FIRE EQUIPMENT DIVISION
SEATTLE 1, WASHINGTON

In the Fire Service—
THERE'S NOTHING "JUST AS GOOD"

The fire service prides itself on buying "the best," everytime. *INSIST on ATLAS*—everytime— and you'll get the *best* life net!

ATLAS LIFE NETS



ATLAS SAFETY EQUIPMENT CO., INC.

27 WARREN ST. NEW YORK 7, N. Y.

alarm starts more things popping than Jules Verne could ever have dreamed up. With the sound of gongs and bells all over the place, an automatic mercury switch has lighted up the second floor and hallway of his house (Harding's bedroom is at the end of the hall), the lights leading down the winding front staircase and in the den, the kitchen and the passageway leading to the "barn" flash on.

Harding, who is considerable of a gadgeteer himself, has installed two complete sets of eight separate city and town fire tapper systems in his garage (he also has tappers covering both Boston and suburban area fire departments in his home and office). Among other gadgets, he developed with the aid of G. E. what he calls a "selector" which picks out the multiple alarms of greater Boston, and ignores the "small stuff" when he doesn't wish to be disturbed by it.

When the gong hits, and the lights go on, an automatic switch controls and extinguishes the lights at the end of 1½ minutes then resets the system for future alarms. (Harding is out of bed, into his turnout and car, and away within that length of time.)

His basement contains a regular battery room where cells are automatically charged through rectifiers so that if his 110 A.C. current fails, his system will operate for 48 hours. All wires enter the premises underground. There are four fire alarm boards—one 800-pounder of slate in his grandson's room (all the family are "sparks") and he has three plastic type boards weighing only 60 pounds apiece.

Besides the wired system and equipment, he has short wave receivers and transmitters capable of reaching all cities within the Greater Boston area. Two of these radios are upstairs, two off the kitchen and four in the "barn."

Then there are other things, like sliding poles leading from upstairs to ground floor of the "barn," which measures about 30x75 ft. and is actually a three-car garage and includes a miniature theatre, barbecue pit, television room and nerve center of all fire communications. It is also the unofficial headquarters of the "club."

The "club" has no name, no ritual and in fact is merely the appellation given the bunch of fellow "sparks" who congregate with Brother Harding to talk fires and firemanship. On Saturday nights there are usually special guests. The only password is "does he know and love the fire service" Thus you'll likely find Father Edward Sullivan—"Father Ed" to firemen and friends—along with Victor Shayeb, son-in-law of Harding (and equally rabid "spark"), possibly Fire Commissioner Russell Codman of Boston; Arthur Fiedler, distinguished director of famed Pops orchestra; with newspaper men, doctors, sheriffs, priests, fire department personnel off-duty.

Boston and firemen of suburban cities all know "Spark" Harding and his big car. In him they know they have an enthusisatic supporter and friend—a guy who's proud to butt a ladder, tote a coffee pot, or bat the breeze with them at any and all hours.

Massachusetts Mutual Aid Law

The so-called "mutual aid law" of Massachusetts, authorizing fire departments to respond to fire calls among neighboring cities and towns in the Commonwealth was amended March 22, 1949, to permit the services to respond to calls in any adjoining states.

The amended Law reads as follows:

[Chap. 77] AN ACT RELATIVE TO THE RESPONSE OF FIRE DEPARTMENTS TO CALLS FOR AID FROM MUNICIPALITIES AND STATES ADJOINING THE COMMONWEALTH.

Be it enacted, etc., as follows: Section 59A of chapter 48 of the General Laws, as appearing in the Tercentenary Edition, is hereby amended by inserting the word "district," in lines 4 and 5, the words:—in this commonwealth or in any adjoining state,—and by inserting the word "district," in line 13, the words:—*Section 59A.* Cities, towns and fire districts may, by ordinance or by-law, or by vote of the board of alder-

Rate $6 per inch less 10% for three or more consecutive insertions.

Classified Advertisements

Closing date for copy 25th of month preceding date of issue.

NEW CATALOG
WAR SURPLUS EQUIPMENT

Our 1949 SPRING CATALOG came off the press April 1st. If you have not received your free copy, write us at once.

Contains over 100 Unused Surplus Fire Fighting Items at prices but a small fraction of normal replacement cost. Quality merchandise at unbelievable prices.

FIRE HOSE—RUBBER HOSE—FIRE AXES—EXTINGUISHERS — FOG NOZZLES — FOAM EQUIPMENT — BREATHING APPARATUS — SIAMESE VALVES—SHUT-OFFS—PUMPS—STRETCHERS — SIRENS — SPOTLIGHTS — TOOLS — PLAYPIPES — BRASS FITTINGS

— and many other items at prices as low as 25% of normal list.

HALPRIN SUPPLY CO.
"THE" Dealer in Surplus Fire Equipment
837 East 4th Place, Los Angeles 13, Cal.

FOR SALE

1—1929 American-LaFrance Pumper, 750 Gal. Capacity. For complete information contact:

FRED K. ROBERTS, SECRETARY
BOROUGH OF PROSPECT PARK
Prospect Park, Pennsylvania

WANTED

Fire Equipment Dealers to sell Morning Pride Rubber and Canvas Rubber Fabric Fire Coats and Fire Pants, All Wool Detachable Liner, Mitts and Suspenders.

Write today MORNING PRIDE MFG. CO., 1986 Home Ave., Dayton 7, Ohio.

POSITION WANTED

Position as firefighter—age 41, experience 12 years a semi-volunteer, have a U. S. Civil Service rating of 81.25 with Wright Field, can give best of references as to character and ability, interested in fire prevention, belong to the International Assn. of Fire Chiefs as an associate member, a subscriber to Fire Engineering for years, and a member of other Associations, have lived around a fire dept. all my life, no objection to anywhere in the United States. Write to:

POST OFFICE BOX 183
YORKTOWN, INDIANA

FOR SALE

One city service truck, 1929 Combination Ladder Co., Maker, Larrabee chassis, Continental 6-B motor, 6 cyls. 3¾ x 5, Brown-Lipe Trans., spicer rear end, etc., 300 ft. ladder in fair condition, 40 gal. booster tank operated by CO_2, pike poles and other misc. equipment. Truck in excellent condition but needs paint. Price reasonable.

DARIEN FIRE DEPT.
Darien, Conn.

EASTMAN-EVACUATORS

$10.00 Shipping Charge Allowance

75 Ft. Aerial Ladder Model	$497.50
*65 Ft. Aerial Ladder Model	$435.00
50 Ft. Ground Ladder Model	$335.00
*50 Ft. Ground Ladder Model	$325.00

*Demonstrator—but same as new.

BIG HORN SUPPLY, INC.
Phone 91769 P.O. Box 1493
Billings, Montana

FOR SALE

Mack Pumper, 1929 Model, 750 GPM Hale Pump, new tires, full size hose body, in perfect condition and in active service. Demonstration on request.

CHELTENHAM FIRE CO. #1
Cheltenham, Penna.

SURPLUS FIRE EQUIPMENT

Enormous Savings
Top Brand — Unused Stock

	Factory Price	Our Price
2# CO_2 Extinguishers	$22.00	$11.75
15# CO_2 Extinguishers Squeeze grip	$55.00	$35.75
50# CO_2 Extinguisher Cylinders	$42.00	$38.50
100# CO_2 Extinguishers	$385.00	$162.00
2½ gal. Water Extinguishers	$26.50	$16.25
⅛" & 1" CO_2 Squeeze Grip Valves	$10.00	$7.20
Liquid Foam Nozzle, with 2 gal. Hip Pack & Syphon	$65.00	$18.50
Foam Pressure Proportioners	$385.00	$52.50
Foam Accumulators	$720.00	$21.00
3' CO_2 Hose ¼" Couplings	$4.50	$2.00

Top Brand — Used — Like New

40 gal. Foam Extinguishers	$562.00	$162.00
300# CO_2 Trailer Extinguishers	$1494.00	$724.00
15# CO_2 Extinguishers Squeeze grip	$55.00	$28.50
15# CO_2 Extinguishers wheel valve	$55.00	$20.50
Liquid Foam—5 gal. cans	$22.00	$5.25

Numerous other items in stock
Quality Discounts Given
Write for full particulars

ABSOLUTE FIRE PROTECTION COMPANY
1081 Arlington Ave., Plainfield, N. J.

REPRESENTATIVES WANTED

Representatives wanted to sell Fire Apparatus in Kentucky and Tennessee, built by nearby manufacturer with established reputation. Prompt deliveries. Good commissions. Write to:

OREN ROANOKE CORP.
P. O. Box 264, Roanoke 2, Virginia

WANTED

Dealer—Distributors to sell fire apparatus manufactured by well-known Factory. Also popular line of high grade fire hose. Prompt Delivery. Attractive proposition. Address Box 15, c/o FIRE ENGINEERING, 24 West 40th St., New York 18, N. Y.

Kindly mention FIRE ENGINEERING *when writing advertisers*

men, selectmen or of the prudential committee or board exercising similar powers, authorize their respective fire departments to go to aid another city, town or fire district in this commonwealth or in any adjoining state in extinguishing fires therein, and while in the performance of their duties in extending such aid the members of such departments shall have the same immunities and privileges as if performing the same within their respective cities, towns or districts. Any such ordinance, by-law or vote may authorize the head of the fire department to extend such aid, subject to such conditions and restrictions as may be prescribed therein. The words "fire departments" as used in this section shall mean lawfully organized fire fighting forces, however constituted.

Any city, town or district in this commonwealth aided under and in accordance with this section may compensate any city, town or district rendering aid as aforesaid for the whole or any part of any damage to its property sustained in the course of rendering the same and may reimburse it in whole or in part for any payments lawfully made to any member of its fire department or to his widow or other dependents on account of injuries or death suffered by him in the course of rendering aid as aforesaid or of death resulting from such injuries.

Toronto "Box 12" Buffs Hold Annual Meeting

The Box 12 Association of Toronto, Ontario, held its annual meeting Tuesday, April 19, 1949, in the King Edward Hotel, Toronto. The date marked the anniversary of the city's "Big Fire" in the year 1904. The principal guests were Fire Chief Peter Herd and his two Deputy Chiefs, Albert Steen and Joe Waterman, and Toronto's Chief of Police, John Chisholm. The States were represented by Fire Commissioner—and "buff" extraordinary—Paxton Mendelssohn of Detroit.

The Box 12 Association is the proud possessor of the original old Box 12, located for fifty years at King and Bay Streets, which Chief Herd, a bit of a sentimentalist himself, presented to the group at exactly 8:06 P.M., which department records show was the time of the first alarm for the "Big Fire." The old box still functions and it was appropriately "pulled" for the occasion by the dean of Toronto buffs, W. P. (Percy) Bretz, veteran newspaper man.

The banquet tables were appropriately decorated with real fire helmets, polished play pipes as flower-holders and even the place cards, hand painted by the daughter of buff George McDonald, bore out the fire buff motif. Honorary member William (Bill) Gibson introduced Paxton Mendelssohn, the speaker of the evening.

During the affair a pair of beautiful brass book ends of fire helmets were presented by the Association to Chief Herd.

Law Against Smoking in Bed Urged

The Hotel Association of Canada is endeavoring to have provinces pass legislation which would make it an offense under the law, if damage results from smoking in hotel beds.

OWN YOUR EQUIPMENT AND MAKE YOUR FUND RAISING CAMPAIGNS MORE SUCCESSFUL!

Increase revenue at all your affairs with Evans' equipment. Big selection of Wheels, Bingo Supplies, Games of all types. Superior "flash" offers strongest attraction. Mechanical perfection insures fool-proof operation. Evans' 56-year reputation for satisfying strict requirements of professional Carnival and Club operators is your assurance of more profitable fund raising activity!

Save Rental Costs!

Write for FREE Evans' Catalog Today

H. C. EVANS & CO.
Dept. 75. 1528 W. Adams St.
CHICAGO 7, ILLINOIS

Monroe FOLDING BANQUET TABLES

NO KNEE CONTACT

NON-TIPPING

Ideal for Fire Halls

FOLDS THIN, ONLY 2½ INCHES

FOLDING CHAIRS

3 types easy - folding chairs in ALL STEEL or HARDWOOD. Write for prices.

THE Monroe COMPANY INC.
28 CHURCH STREET COLFAX, IOWA

CAIRNS

Outfitters to Firemen Since 1836

ALUMINUM HELMETS

Crown and brim are drawn from one piece of rolled aluminum; crown corrugated for greater strength and reinforced by four heavy combs; brim beaded, and reinforced by steel wire rolled into the edge; CAIRNS CUSHION LINING for comfort, safety and security; made in regulation and drop brim styles; light, strong, durable helmets that will not shrink or lose shape.

Write for Catalog 331.

CAIRNS & BROS., INC.
ALLWOOD, CLIFTON, N. J.

JANESVILLE QUALITY TURN OUT CLOTHING

Our turnout suits are giving excellent satisfaction in most of the large fire departments throughout the U. S. and

THERE MUST BE A REASON WHY SO MANY FIREMEN INSIST ON JANESVILLE QUALITY

NOW AVAILABLE

We can now supply old type ¾ Length and Knee Length Felt-Lined Firemen's Boots.

JANESVILLE APPAREL CO.
JANESVILLE, WIS.

CHIEF D. W. BROSNAN

of the Albany, Ga., Fire Dept., says:

"WE CARRY **SALVAGE COVERS** ON EVERY PIECE OF EQUIPMENT"

Shuredry GREEN-BAK SALVAGE COVERS

"We have used Salvage Covers for more than 25 years, and they are a great aid to us in reduction of loss when we use water. Water damage is responsible for a great amount of fire loss unless the department protects the building, goods, and furnishings by spreading covers to protect them. The public credits the fire department with intelligent effort, when, after a fire, they find their property has been protected from water damage. You are at liberty to quote me as being fully sold on salvage covers for water-damage protection, and they are not expensive if they are properly cared for while in use and after using."

FIRE CHIEFS: In your requisition for salvage covers, be sure to specify Shuredry Salvage Covers, sold by your equipment dealer. They pass every test for water penetration, seepage, resistance to cracking when folded, pliability in coldest weather. Fulton Green-Bak Salvage Covers are light in weight, easy to handle, and are the preference of fire departments everywhere.

CITY MANAGERS: Buy Shuredry Salvage Covers from your fire equipment dealer. Other quality Fulton products that will give you long, economical service are Fulton Triple-Strength Tarpaulins, Fulco Cotton Concrete-Curing Mats.

SHUREDRY Salvage Covers can be obtained through your regular fire equipment dealer.

For Top Dependability Specify

Shuredry GREEN-BAK SALVAGE COVERS

Approved by National Board of Fire Underwriters and by Factory Mutual Laboratories.

For further information, write your nearest Fulton branch.

Fulton BAG & COTTON MILLS

Atlanta • St. Louis • Dallas • Denver
Kansas City (Kans.) • Minneapolis • New Orleans
Los Angeles • New York, 434 Broadway • Winter Haven (Fla.)

ADVERTISING INDEX

FIRE ENGINEERING

JUNE, 1949

	Page
Acme Protection Equipment Co.	460
All-Out Mfg. Corp.	458
Aluminum Ladder Co.	407
America's Best Coatings, Inc.	456
American Fire Apparatus Co.	405
American-LaFrance-Foamite Corp.	397
American-Marsh Pumps, Inc.	449
Approved Fire Equipment Co.	440
Atlas Safety Equipment Co., Inc.	463
Bar-Way Mfg. Co.	460
Bean Mfg. Co., John	401
Bi-Lateral Fire Hose Co.	437
Blackinton & Co., Inc., V. H.	404
Body Guard Mfg. Co.	462
Boston Woven Hose & Rubber Co.	398
Boyer Fire Apparatus Co.	451
Braxmar Co., C. G.	458
Buckeye Iron & Brass Works	444
Cairns & Brother	465
Capital Fire Equipment Co., The	453
Carbide & Carbon Chemicals Corp.	443
Carpenter Manufacturing Co.	461
Central Fire Truck Corp.	452
Circul-Air Corp.	460
Darley & Co., W. S.	457
De Boer & Assocs., H. O.	451
Duo Safety Ladder Corp.	390
E and J Manufacturing Co.	406
Elkhart Brass Mfg. Co., Inc.	459
Emerson Co., J. H.	Inside Front Cover
Eureka Fire Hose Div., U. S. Rubber Co.	441
Evans & Co., H. C.	465
Fabric Fire Hose Co.	409
Fairbanks, Morse & Co.	462
Federal Enterprises, Inc., Signal Div.	387
Four Wheel Drive Auto Co.	Back Cover
Fulton Bag & Cotton Mills	466
Fyr-Fyter Products	462
Gamewell Co.	414
General Detroit Corp.	412
Goodall Rubber Co.	448
Goodrich Co., B. F.	391
Gorman-Rupp Co.	442
Hale Fire Pump Co.	446; 461
Hamilton Scale Co.	446
Hardie Mfg. Co.	459
Harrington Signal Co.	463
Howe Fire Apparatus Co.	447
Janesville Apparel Co.	465
Koehler Mfg. Co., Inc.	457
Leece-Neville Co.	400
McIntire Brass Works, F. N.	463
Mack Mfg. Corp.	393
Mars Signal Light Co.	402
Maxim Motor Co.	408
Midwestern Mfg. Co.	392
Mine Safety Appliances Co.	394-395
Monroe Co., Inc., The	465
National Foam System, Inc.	399
Oberdorfer Foundries, Inc.	396
Onan & Sons, D. W.	460
Oren Roanoke Corp.	455
Pacific Marine Supply Co., Fire Equipment Div.	463
Pirsch & Sons Co., Peter	Inside Back Cover
Powhatan Brass & Iron Works	450
Radio Corp. of America, Engineering Products Dept.	411
Randolph Laboratories, Inc.	451
Republic Rubber Div., Lee Rubber & Tire Corp.	403
Rockwood Sprinkler Co.	389
Russell Uniform Co.	461
Safety First Co.	445
Scharff, Inc., J. H.	452
Smith, Inc., L. B.	410
Smith & Co., D. B.	439
Stephenson Corp.	447
Sterling Siren Fire Alarm Co., Inc.	456
United States Motors Corp.	454
Ward LaFrance Truck Corp.	413
Waterous Company	438
Wentworth-Forman Co., Inc.	462
Wooster Brass Co., The	455

GROSSE POINTE PARK, MICH., recently added this 55′ Pirsch Junior Aerial Ladder truck to its Fire Department equipment.

Designed for use in residential areas of cities and for general suburban fire service, this piece of apparatus provides the equipment and service of the regular City Service Ladder truck plus the one man aerial hoist control feature for raising, placing or lowering a 50′ or 55′ extension ladder.

With the Pirsch Junior Aerial Hoist one man does quicker and better what six men formerly accomplished.

For modernizing service trucks and quads now in service the Pirsch Junior Hoist may be purchased separately from the complete truck.

PETER PIRSCH & SONS CO. KENOSHA, WIS.

"BUILDERS OF AMERICA'S FIRST ALL-POWERED AERIAL LADDER TRUCK AND AMERICA'S FIRST 100′ AERIAL LADDER"

PROOF - *not Guesswork*

Makes FWD America's Foremost Heavy-Duty Truck

Here's actual operating proof in typical fire-fighting service. This FWD Pumper owned by a midwestern municipality twists its way to an off-the-road water supply. Going such as this demands fire engines that can do the job. It demands fire engines you can rely on every day. It demands FWDs. Yes — you can be sure of this with an FWD even before you buy. Here's why. FWD Fire Fighters are scientifically tested on FWD's proving ground to twist over irregular ditches — 18 inches deep. *No wonder FWD fire-fighting apparatus is used in fleets up to 50 units by America's leading cities!*

WHAT FWDs DO ON THE PROVING GROUND
1 Highball over hilly curved roads!
2 Slog thru mud — up to the bumper!
3 Speed over 100-ft. unbanked circle!
4 Twist over ditches —18 inches deep!
5 Drive up 6% grade thru 3-ft. of sand!
6 Climb 70% grade from dead stop!
7 Climb 8-in. beam from standstill!
8 Drill pole holes to prove equipment!
9 Speed safely over level highways!
1
2
3
4
5
6
7
8
9

This is FWD's proving ground. This is your assurance that the FWD you select has the stamina to insure long life without expensive mechanical breakdowns.

An FWD twists over 18-inch ditches on the proving ground. For all the facts about FWD fire engines, see your FWD distributor — or write FWD direct.

An Invitation To Fire Engine Buyers

We invite you to watch FWDs pass a series of the most rigid performance tests. Ask your FWD distributor to arrange your visit to our plant. Or—if you can't get away, ask him to show you the movie, *The FWD Story*. In either case, you will see for yourself how FWDs can help solve your fire-fighting problems.

Martin G. Otis
President
The Four Wheel Drive Auto Company

THE FOUR WHEEL DRIVE AUTO COMPANY
Clintonville, Wis. • *Canadian Factory:* Kitchener, Ontario
FOUR AND SIX WHEEL DRIVE TRUCKS

America's Foremost Heavy-Duty Truck